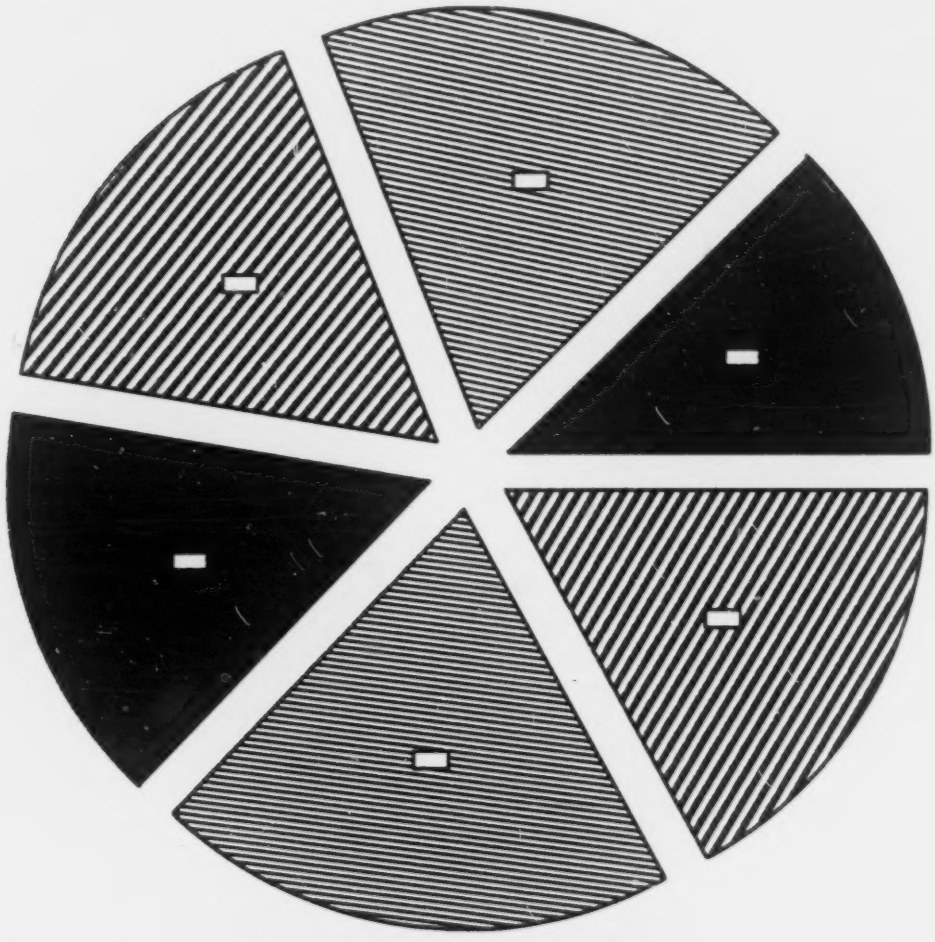
58750-4-4

PLANNING INFORMATION FOR EMPLOYMENT, TRAINING AND INDUSTRIAL DEVELOPMENT



August 1985

WISCONSIN DILHR DEPARTMENT OF INDUSTRY, LABOR & HUMAN RELATIONS

WISCONSIN

PLANNING INFORMATION

FOR

EMPLOYMENT, TRAINING AND INDUSTRIAL DEVELOPMENT

1985

WISCONSIN DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Division of Employment and Training Policy

Bureau of Labor Market Information

Affiliated with

Employment and Training Administration
and
Bureau of Labor Statistics
U.S. Department of Labor

LABOR MARKET LMI INFORMATION

Prepared by: Jerry Snow, Project Coordinator (608) 266-0230, with Bill Beutel, Dianne Carlson, August Cibarich, Kay Elwers, Tim Marquis, Tom Rondou, Kay Sommers, Nicki Van Etten.

The agency wishes to extend its appreciation to the following individuals who were active participants in the preparation of industry projections: Balkrishna Kale, Demographer, Department of Administration; Dale Landgren, Supervisor, Wisconsin Electric Power Co.; Pat Luby, Economist, Oscar Mayer Foods Corporation; Bob Naylor, Information Specialist, Department of Administration; David Peterson, Analyst, Department of Administration; Randel Pilo, Economist, Department of Development; and Franz Backus, John Henning, Hartley J. Jackson, Tom Rondou, Michael Schoenfield, Jerry Snow, Kay Sommers, and Joe Tumpach, Department of Industry, Labor and Human Relations.

I N T R O D U C T I O N

This report sets forth the elements that will best enable people involved in employment and training to plan and carry out their programs. There are four parts:

1. Wisconsin Geography, Population and Labor Force
2. Unemployment and People Needing Employment and Training Assistance
3. Industry Employment and Economic Trends
4. Occupational Supply and Demand

The Bureau Labor Market Information of the Division of Employment and Training Policy in the Department of Industry, Labor and Human Relations has produced this report to meet your planning needs and invites your comments on it.

PLANNING INFORMATION FOR EMPLOYMENT, TRAINING
AND INDUSTRIAL DEVELOPMENT

	Page
Preface	
1. The End of Rapid Inflation	3
2. Young Vs. Old	3
3. A Smaller Safety Net	4
PART I. GEOGRAPHY, POPULATION AND LABOR FORCE	7
Section A. Geographic Growth 1980-1984 by High Growth Counties	7
1. Total Employment Growth	7
2. Wisconsin Employment Concentrations and Recent Trends	7
3. Manufacturing-Trade-Service-Agriculture - Employment and Trends	8
Section B. Summary of 1984 Labor Force Projections	14
1. Civilian Labor Force History	14
2. Labor Force Trends 1980-1984	18
PART II. UNEMPLOYMENT, PEOPLE NEEDING EMPLOYMENT AND TRAINING ASSISTANCE	21
Section A. Labor Force and Poverty Status of Families with Female Head by Presence and Age of Children	21
Section B. Women and Minorities: Their Proportions Grow In the Professional Workforce In the United States	23
1. Wages, Male and Female Dominated Occupations in Wisconsin	25
2. Average Weekly Wage 1980-1984	28
3. Ratio of Women Employees 1980-1984	29
4. Covered Employment 1980-1984	30
Section C. Wisconsin's Projected Population - 1980-2010	31
Section D. Public Assistance Incidence in JTPA Populations by County and SDA in Wisconsin	44

Section E. JTPA Eligible Populations - State of Wisconsin 51

Section F. The Insured Unemployed -- Weakened Safety Net? 60

Section G. Profile of the Dislocated Worker in Wisconsin 63

Section H. Profile of Plant Closings and Layoffs in Wisconsin 67

PART III. INDUSTRY EMPLOYMENT AND ECONOMIC TRENDS PROJECTIONS 71

Section A. Nonfarm Wage and Salary Employment 71

Section B. Industry Projections to 1990 and 1995 78

Section C. Wages in Wisconsin 104

PART IV. OCCUPATIONAL SUPPLY AND DEMAND 107

Section A. Occupational Replacement Needs 107

Section B. Active Applicants and Unfilled Openings by SOC 109

Section C. New Occupational Clusters -- The "WILL" System 123

PREFACE

A year ago nine issues were presented as major factors expected to influence employment and training and industrial development efforts in the next decade.* They were:

Computers On the Factory Floor. The increased development and use of computer assisted design (CAD) and computer assisted manufacturing (CAM) makes several hundred thousand operative and laboring jobs in manufacturing susceptible to displacement over the next decade. Recent advances in integrating CAD with CAM and increasing price pressure from imports over the past year have increased the probability of this happening.

The Functional Illiterates. The reduction in the number of jobs available to functional illiterates from the current use of, and expected surge in additional, automation heightens the urgency for reducing the number of functional illiterates in our population.

The Growth of Technical Work. The need for selected types of technicians is increased by the expected surge in factory automation.

The Non-Technical College Harvest. Large numbers of nontechnically trained college graduates continue to emerge from our nation's colleges. Finding suitable employment for them takes on added significance when one considers the steady increase in the average size of student debt incurred during the educational process.

The People Work Explosion. Jobs which involve extensive work with "people" as opposed to "things" have increased rapidly in recent years. The question to consider is the likelihood of this type of employment continuing to grow at such a pace in the future.

The Rationing of Jobs and Wages. Employment and training programs have an obvious payback when labor markets are tight (i.e., when there are more jobs than qualified candidates). In today's harsher economic climate, when agencies, programs and individuals are competing in a jobs-short world, formulating an appropriate employment and training agenda poses a particularly stern challenge that is likely to persist through the decade.

Tri-Worker Families. With declines in higher paying industries and increases in the much lower paying service industries, the pressure for children to work outside the home could increase significantly in the future.

Paying Back the Debt. Debt of all types -- consumer, government, commercial and foreign -- continues to increase. In the future, paying back the debt will limit the financial resources available for many purposes, including employment and training as well as business investment.

---

*See Planning Information for Employment, Training and Industrial Development, Wisconsin Department of Industry, Labor and Human Relations, September 1984.

The Surge In Entrepreneurship. A surge in the number of small firms is taking place largely outside the context of traditional employment and training activities. How might we expand our activities to include the new entrepreneurs?

The significance of these trends has not diminished over the past year. This year, we have added three more which are also expected to have great impact on employment and training and industrial development efforts during the next decade:

- The End of Rapid Inflation. The switch to a deflationary economy is not a temporary phenomenon; it must be incorporated into future employment and training planning efforts.

- Young Vs. Old. The end of rapid inflation may pit young workers' interests against those of older workers and retired workers in the future.

- A Smaller Safety Net. Safety net reserves, such as those for unemployment insurance and financial institution insurance, are being depleted or reduced in size and thus must be rebuilt. If they are not, protection and benefits may be limited in a future economic downturn.

Recognizing these will lead to a clearer understanding of the economic context for employment and training efforts. A fuller discussion follows.

THE END OF RAPID INFLATION

During the lifetime of the vast majority of the people living in the industrialized nations, inflation was the economic experience. While brief periods of price stability may have occurred, our economic expectations were influenced most by rising prices and scarcity. Inflation had lasted so long that most of us thought it was a permanent condition.

However, in recent years, farmers, bankers, miners and others, whether small or world-class in size, have been adversely affected by price deflation. Commodity prices generally and the prices of some finished goods have decreased in price.

In the past, once put in motion, a major switch from inflation was not likely to stop at disinflation -- a slowing of the rate of inflation. A deflationary period usually followed, characterized by an overall decline in price levels.

More price declines can be expected to follow since efforts to increase productivity, lower unit wage costs and increase production capacity have become widespread, worldwide developments. Today, overcapacity appears to be a major force in the world's economy. It is likely to continue to be.

An occasional spurt in the price of a commodity or a product will, no doubt, still occur in the next five years, but the basic price trend now appears to be downward for commodities and many finished goods.

The changes in the price trends that have already taken place are sufficient to alter future labor market conditions. Companies that cannot raise prices are generally unable to raise employe wages unless worker productivity increases. This has implications for the number of workers needed.

In the short run, we can expect uncertainty, disruption and miscalculations to accompany the end of rapid inflation.

In the long run, increased demand will eventually occur as increased productivity lowers prices and new products and services develop from innovations we cannot now envision. As a result, the demand for labor will again increase.

The significance for those who plan future employment and training efforts is that we cannot limit ourselves to using the trends resulting from decades of rapid inflation and product shortages when we attempt to estimate future employment and training needs in a new environment that includes significant, if not widespread, deflation.

YOUNG VS. OLD

One of the consequences of the shift from an inflationary economic environment to one of disinflation, and possibly generalized deflation, is a developing conflict of interest between younger individuals of working age and older individuals in our society.

While best illustrated by the current two-tier wage phenomena, in which new workers start at a wage level significantly below current workers doing the same jobs, there are other major illustrations.

Maximum Social Security taxes are now many times the maximum that was paid in by most retired workers during their employment. The Social Security system is now supported by a much smaller number of current workers per recipient than in the past. That number will continue to decline.

The end of rapid asset appreciation, resulting from the taming of inflation and the lower interest levels for savings accounts, limits the ability of the young to accumulate a nest egg for retirement. In addition, employment growth in lower paying industries and declines in higher paying industries limit the wages younger workers receive.

Not all developments have been disadvantageous to today's youth. On the positive side, the ability to shelter income from taxes to a future date, if invested in IRA's or other retirement plans, was not available to most of today's elderly until recently. However, these accounts must be financed out of savings that may be difficult for young workers to accumulate, given the other barriers to savings mentioned above.

Earning less (in real, if not current terms) and being asked to contribute a much higher percentage of their earnings to a safety net that will not directly benefit them for decades, younger workers can be expected to desire changes in the Social Security financing system.

Changes in current intergenerational relationships can be expected to affect employment and training. For example, raising the retirement age for Social Security purposes, to reduce taxes on today's workers, would also reduce the job openings normally created through retirement, thus reducing job opportunities for youth.

The interests of young workers vs. the interests of elderly will be a part of the socio-economic environment in which future employment and training efforts will take place.

A SMALLER SAFETY NET

As we switch from an inflationary economic environment to a disinflationary or deflationary one, the financial resources available for the socio-economic safety net, relative to the need for these resources, stop increasing. The need becomes greater as more individuals and organizations feel a financial squeeze; yet the flow of funds for this purpose becomes smaller as inflation declines.

Problems associated with the efforts to slow down or stop inflation, the using up or reduction of reserves in government insurance accounts such as unemployment insurance reserves and bank failure reserves, and other problems such as the federal deficit have resulted in some retrenchment from past levels of benefits. The fact that these problems are continuing and that the pace of economic recovery is uncertain indicates that this trend towards the reduction of benefits will continue.

The shrinking of the safety net increases the need for successful employment and training efforts. But these programs currently are also under increasing budget restraints.

Thus, the outlook for employment and training programs appears to be a continuation of increased need for the services with a smaller amount of resources available for this purpose. The need for greater efficiencies in employment and training and industrial development efforts has increased and will continue to increase in the future.

PART I. GEOGRAPHY, POPULATION AND LABOR FORCE

Section A. Geographic Growth 1980-1984 by High Growth Counties

Total Employment Growth

Between March 1980 and March 1984 a total of 41 Wisconsin counties gained employment at rates ranging from 0.4 percent to 12 percent. (By contrast, the number employed in the State as a whole showed little change, declining about 0.1 percent from 2,158,300 in March 1980 to 2,155,488 in March 1984.)

The top ranked counties, combining numerical gain and percent gain, fall into several geographical groupings: Burnett, Sawyer, Taylor, Oneida in the Northwest; Brown, Door and Kewaunee in the Northeast; Chippewa, Eau Claire, La Crosse and Juneau in the West; Portage, Adams and Marquette in the Central; and Iowa, Dane and Green in the South.

The 17 counties had employment gains of seven percent or more. Eleven of these counties (Dane, Brown, La Crosse, Portage, Eau Claire, Chippewa, Door, Green, Burnett, Iowa and Oneida) ranked high in both percent change and number change.

Ten of these counties with high total employment growth were top percentage gainers in Manufacturing employment. Six counties had high percentage increases in Service employment, and three of these also increased in Manufacturing. Of five counties that had high percentage increases in Trade Industry employment, four also had high numeric increases in Manufacturing employment. (see maps and following narrative)

The significance of rapid growth in Service or Trade employment, where Manufacturing employment is also growing rapidly, would benefit from additional analysis in the weeks ahead.

Wisconsin Employment Concentration and Recent Trends March 1980 - March 1984

Where is employment in Wisconsin's largest industries (Manufacturing, Trade, Service and Agricultural) concentrated? How have Wisconsin's employment patterns changed in recent years?

We have attempted to answer those questions by examining information from a variety of sources: Unemployment Compensation information (ES-202 for payroll data by county), local area Unemployment statistics (LAUS for total employment by county), and the 1980 Census (for agricultural employment by county).

March employment data by county in 1980 was compared with 1984 March data for all of the four major industries except agriculture. County agricultural data is available only from the 1980 Census. Thus, no trend analysis was possible for agricultural employment.

Counties with industry employment concentrations that ranked in the top 20 percent (usually 15 counties) were considered to have a concentration of that

PART II. UNEMPLOYMENT, PEOPLE NEEDING EMPLOYMENT AND TRAINING ASSISTANCE

Section A. Labor Force and Poverty Status of Families With Female Head By Presence and Age of Children State

Labor Force

In 1980, 963,989 women in Wisconsin over the age of 16 were in the labor force compared to 864,983 women not in the labor force. Of the 963,989 women in the labor force, 139,824 or 14.5 percent had children five years old or less in their household. Women with children 6-17 years old numbered 239,384 or 24.8 percent of the total number in the labor force.

In 1980, 59 percent of all Wisconsin mothers with children under age 18 were in the labor force, a total of 379,208 mothers working outside the home. This compares to a 1984 national percentage of 60.5 percent. Among Wisconsin mothers with children under six years of age, 48.5 percent (139,824) were in the labor force. The comparable 1984 national figure was 52.1 percent.

Nationally, in the past four years the number of mothers working outside the home increased by two million, and those mothers with children under six years of age were responsible for 60 percent of the increase.

Poverty Level

The national poverty level of families maintained by women was 47 percent or 5.7 million families in 1984. The 1979 Wisconsin figure was 25.1 percent or 33,423 out of the total number (133,313) of female headed families.

In 1979, there were 20,345 Wisconsin families with female heads who had children under six years of age. Of these, 10,492 families were classified as below the poverty level. A total of 12,122 families with female heads and children ages 6-17 were classified below poverty, while families with female heads and children of both age groups and classified below poverty numbered 8,652. Including families with no related children, there were a total of 33,423 families with female heads living below poverty level.

The following WISPOP data was developed at the Applied Population Laboratory, Department of Rural Sociology, UW-Madison/Extension. The data shows the poverty status of families with female heads in 1979 by presence and age of children in numbers and percent.

type of employment and are called "top counties." Occasionally exceptions were made to include several additional counties. Both numeric (high number) and percentage (high percent) concentrations were examined to keep the number of comparisons to a manageable size. Decisions were made to select high employment number or high percent of concentration for this presentation. Occasionally both high employment number and high employment percentage were selected.

Manufacturing Employment

The Wisconsin Manufacturing industry represented 27 percent of the state's total employment for March 1980. The majority of the top state counties (by number and by percentage) were east and south of a line drawn from Green Bay (Brown County) to Madison (Dane County) to Janesville/Beloit (Rock County) forming a Southeastern "Manufacturing Triangle".

Exceptions were La Crosse and Marathon Counties which also had large manufacturing employment numbers and Marinette which had a high percentage of manufacturing employment.

There was a wide range of manufacturing concentration in the high number counties, ranging from 41 percent of total employment in Winnebago County to only 12 percent in Dane County. Employment in manufacturing varied from a low of 10,813 in Jefferson County to a high of 158,893 in Milwaukee County.

Manufacturing Employment Trends - A Leveling Change Occurs

Since 1980, growth (both in numbers and percentages) in manufacturing employment has occurred outside of Wisconsin's Manufacturing Triangle with the exception of Brown County.

Growth occurred in Northwestern, West Central, Central and Southwestern Wisconsin and in Shawano and Brown counties in Northeastern Wisconsin, but did not occur (except for Brown County) in the state's Southeastern Manufacturing Triangle.

The significance of this development--growth outside of the area of manufacturing concentration--requires further analysis.

Trade Employment

The top ranked counties, by percentage, for Trade in March 1980 were scattered in groups throughout the state. They tend to form a pattern with the major highways of the state or close to the major highways.

The top counties were: Sauk, Dane and Green in the Southern part of the state; Eau Claire, Jackson and La Crosse in the Western part; Douglas and Washburn in the Northwest; Oneida and Langlade in the North Central; Waupaca, Outagamie and Brown in the Northeastern part; Milwaukee in the Southeastern part; and Wood in Central Wisconsin.

These top 15 counties had from 20 to 33 percent of their employment in the Trade industry. The overall state percentage for Trade was 20 percent in March 1980.

Of the 15 counties, about half (seven) of them also ranked high in the number of employees in trade. They are Milwaukee, Dane, Brown, Outagamie, La Crosse, Eau Claire and Wood.

Trade Employment Trends

The top growth counties in percentage from March 1980 - March 1984 for Trade are, as in the case of Manufacturing, an entirely different group than those shown for high percentage of employment concentration in March 1980. The exceptions are Dane and Brown counties.

The counties with top percentage change of employment for Trade are Ashland, Bayfield, Price and Rusk - Northwest; Chippewa, Pepin - West Central; Forest - North Central; Marathon, Portage, Adams - Central; Brown - Northeastern; Washington, Ozaukee, Jefferson, Waukesha and Racine - Southeastern; and Dane in the South. Thus, trade grew in many counties where there hadn't been high Trade employment before.

Of these 17 high employment growth counties (in percentage), 11 were also ranked high in growth (numbers). They ranged from Waukesha with an increase in employment of 3,191 down to Outagamie with an increase of 203. The state increase in Trade employment was very small, only 2,187, as a number of counties lost employment.

The percent change from March 1980 to March 1984 for the top Trade counties ranged from 55 percent in Portage County down to 7 percent in Dane County. The state percent increase was only 0.5 percent. Annual average data for all of 1984, available only for the state as a whole, revealed slightly larger growth of 3.9 percent for the four-year period. Again, as in the case for Manufacturing, the significance of growth outside of previous concentrations of employment requires further analysis.

Service Employment

Wisconsin had 15 percent of its employment in the Service industry in March 1980. The top ranking counties were scattered in pockets across the state. If you combined the Northwest (Bayfield, Ashland and Sawyer Counties) with the North Central (Vilas and Oneida) they would make up one-third of the counties. The remaining counties were Eau Claire and Pepin in West Central; Wood in Central; Brown, Menominee and Outagamie in the Northwest; La Crosse in Western part of the state; Sauk and Dane - South Central; and Milwaukee in the Southeastern. They also formed a pattern with our main highway routes.

The percentage of Service employment for the 15 counties in March 1980 ranged from 30 percent for Menominee down to 15 percent for Bayfield. The overall state percentage for this category was 15 percent. Seven (47 percent) of the above-mentioned counties also ranked high in the number employed in the

Service Industry. Those counties were Milwaukee, Dane, Brown, La Crosse, Outagamie, Eau Claire and Wood.

Service Employment Trends

The top growth counties with Service employment gains by March 1984 are somewhat different from those counties with high percentage of Service jobs in 1980. The only three that appear in both groups of counties are Bayfield, La Crosse and Wood.

The counties having the highest percent growth in employment in Service are Bayfield, Iron and Taylor in the Northwest; Shawano, Oconto, Door in the Northeast; La Crosse, Monroe, Juneau, Crawford - Western; Marquette, Wood, Green Lake - Central; Iowa - Southwestern; Ozaukee, Waukesha and Rock - Southeastern.

These counties had employment growth rates that ranged from 73 percent in Marquette to 15 percent in Wood. The overall state percent change is nine percent. The majority of the counties which grew from March 1980 to 1984 had low employment in March 1980. Again, the significance of the generally more rapid growth of Service employment in counties that had lower concentrations of Service employment in 1980 requires more analysis.

Service employment (annual average 1984) represents 18.2 percent of total state employment.

Agriculture Employment

The Agriculture industry accounted for seven percent of Wisconsin employment in March 1980. Marquette county had the highest level of Agricultural employment with 40 percent followed by La Fayette with 38 percent and Vernon with 34 percent.

The 15 top percentage counties had 22 percent or more of their employment in agriculture. The majority of these counties were in the Southwest, Western and West Central sections of Wisconsin.

The average level of agriculture employment per county for Wisconsin in March 1980 was 2,175. Thirty-eight, or 53 percent, of Wisconsin counties had more than 2,000 persons employed in this industry.

The top counties in agriculture employment numbers ranged from 3,076 in Dunn County to 7,444 in Dane County. Eleven of the 15 counties had employment from 3,000 to 4,000. The majority of the 15 counties were in the Southern and Central part of Wisconsin.

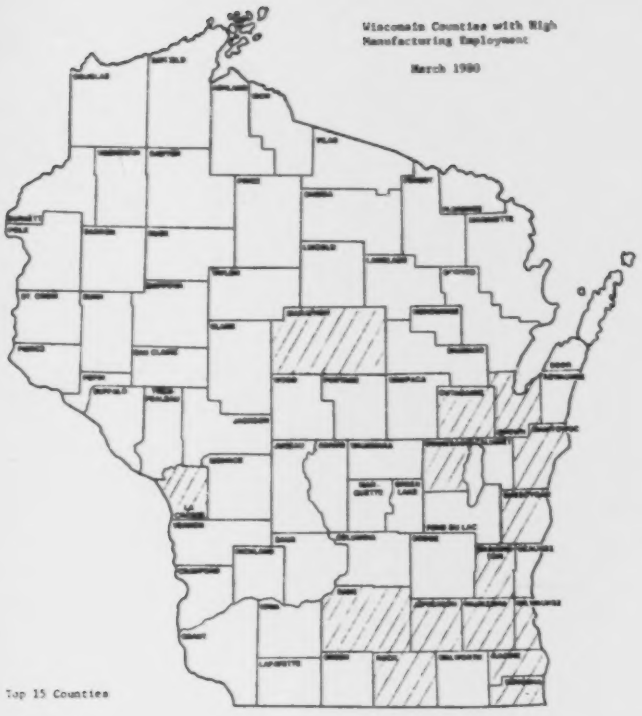
Counties with top (highest) number, or percentage, or both number and percentage of agricultural workers represent 38 percent of the states 72 counties.

The three major agricultural concentrations are Southern, Western and West Central Wisconsin. Clark, Sauk and Vernon are the only counties with both high numbers of agricultural workers and a high percentage of their total employment working in agriculture.

MANUFACTURING EMPLOYMENT

Wisconsin Counties with High Manufacturing Employment

March 1980



Top 15 Counties

Wisconsin Counties with High Percentage and Numeric Gains in Manufacturing Employment

March 1980-March 1984*

Top 17 Counties

*Exceptions: Walworth - High numeric gains only.
Lafayette - High percentage gains only.

TRADE EMPLOYMENT

Wisconsin Counties with a High Percentage of Trade Employment

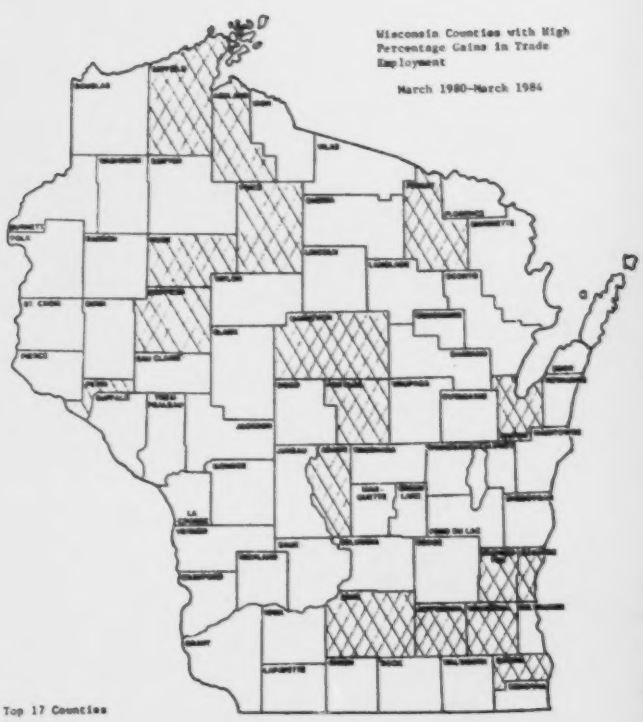
March 1980

Top 15 Counties

Note: Dane and Brown were also in the top Trade counties numberwise.

Wisconsin Counties with High Percentage Gains in Trade Employment

March 1980-March 1984



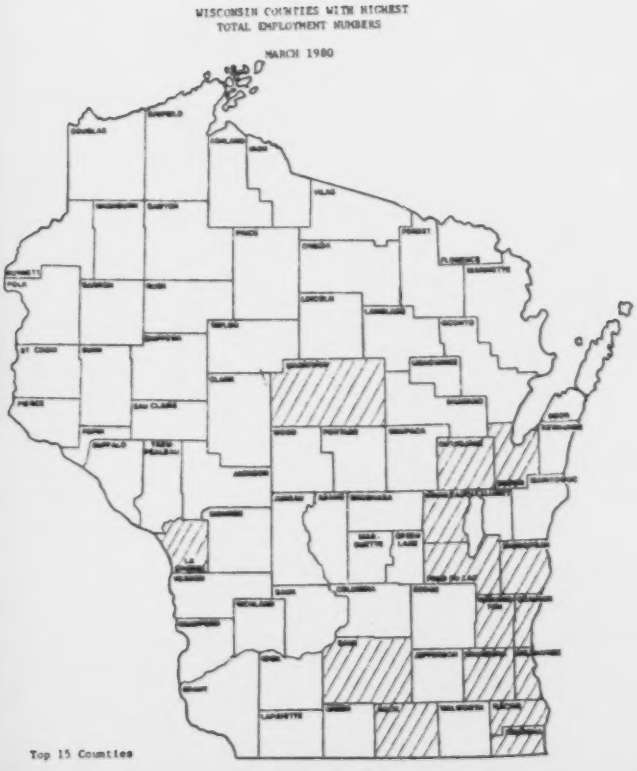
Top 17 Counties

SERVICE EMPLOYMENT

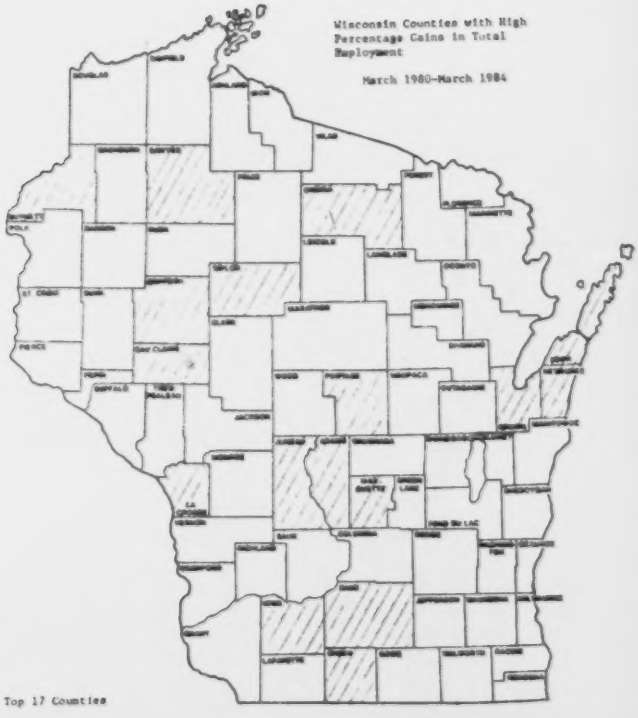
Top 15 Counties

Top 17 Counties

TOTAL EMPLOYMENT



Top 15 Counties

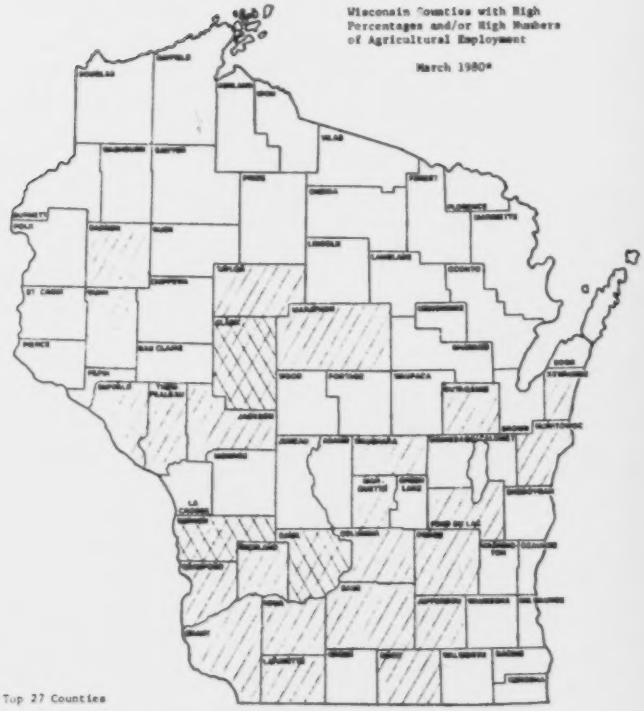


Top 17 Counties

TOTAL EMPLOYMENT

Six counties high percentage gains only
Eleven counties high percentage and numeric gains
Six counties nigh numeric gains only

AGRICULTURAL EMPLOYMENT



Top 27 Counties

*Only Clark, Sauk and Vernon Counties had both high percentages and high numbers of Agricultural Employment.

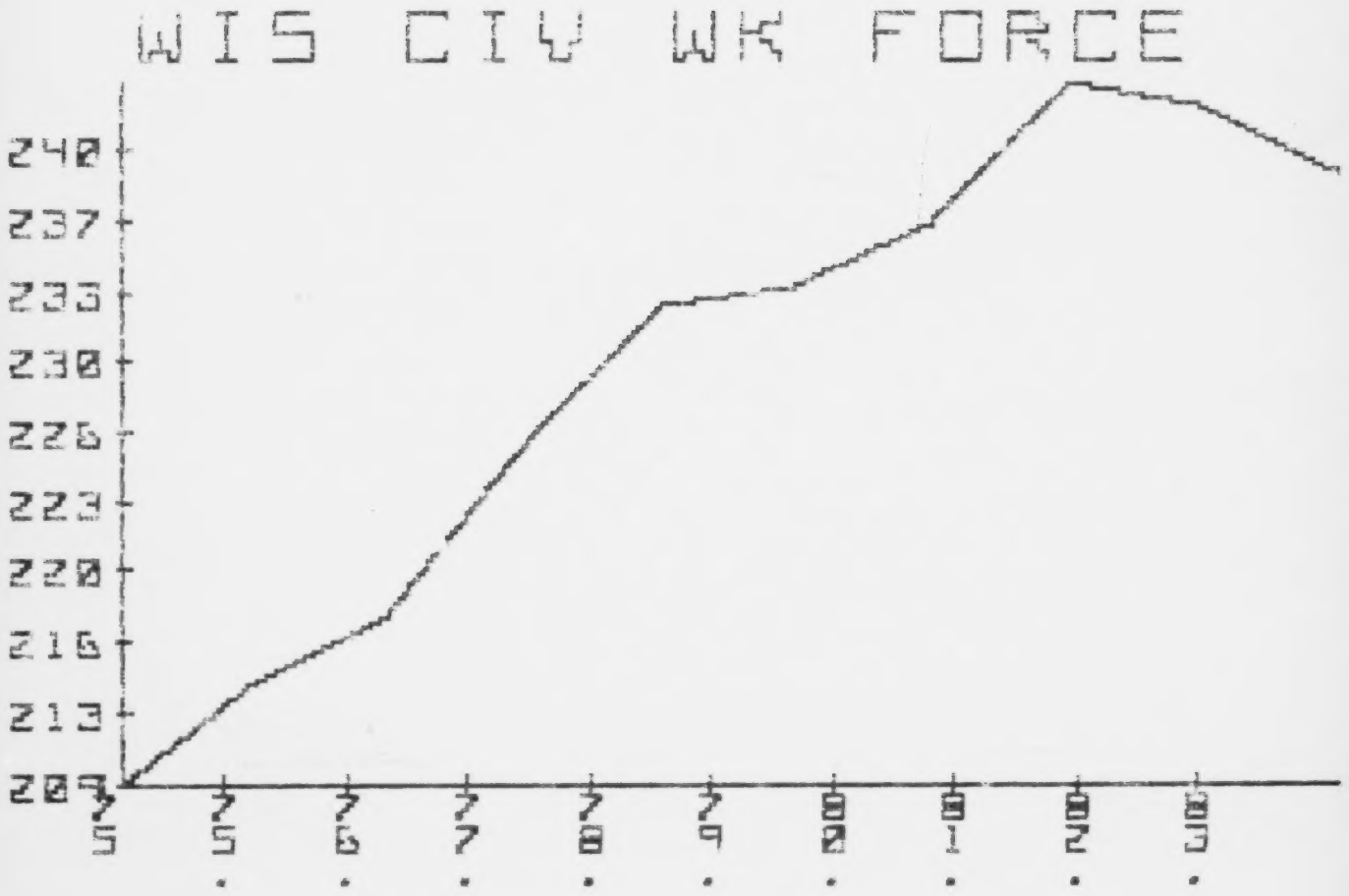
Section B. Summary of 1984 Labor Force Projections

Civilan Labor Force History

The Civilian Labor Force annual average decreased by 1.3 percent from 1983 to 1984. There were 2,426,000 in the labor force in 1983 and 2,394,000 in 1984. The Civilian Labor Force for the first six months of 1985 has averaged 2,371,500, virtually unchanged from the comparable six-month period in 1984.

The annual average employment for 1983-1984 period increased from 2,172,000 to 2,218,000, a 2.0 percent increase. The employment numbers for the beginning of 1985 are: January 2,166,100; February 2,164,900; March 2,175,400; April 2,203,400; May 2,233,600; and June 2,250,000 (preliminary). The six-month average of 2,198,900 represents a gain of nearly 1.5 percent over the comparable period in 1984.

Unemployment decreased by 77,000 during 1983-1984 (253,000 - 176,000) bringing the annual average unemployment rate down from 10.4 for 1983 to 7.3 for 1984, the lowest rate Wisconsin has had since 1980. However, in 1979 the yearly unemployment rate was 4.5 percent, so Wisconsin is still a long way from the pre-recession unemployment rate. So far, the unadjusted unemployment rates for 1985 are January 8.2 percent, February 8.1 percent, March 7.8 percent, April 6.9 percent, May 6.2 percent, and June 6.5 percent (preliminary). The six-month average comes to 7.3 percent, a welcome improvement over the six-month average of 8.1 percent in 1984. In numbers, the six-month average for 1985 is 172,600 unemployed, about 20,000 fewer than the average unemployed during that period in 1984.


WIS CIV WK FORCE
240
237
233
230
226
223
220
216
213
209
75
75.
76.
77.
78.
79.
80.
81.
82.
83.

WIS EMPLOYMENT
222
219
217
214
211
208
206
203
200
197
195
5
5.
6
7
8
5
8
1
2
8

WIS UNEMPLOYMENT
260
244
229
213
198
182
167
151
136
120
105
75.
75.
76.
77.
78.
79.
80.
81.
82.
83.

Labor Force Trends 1980-1984

It is probably not possible to provide employment growth and unemployment projections that are accurate enough and reliable enough to serve as a benchmark against which the success of Wisconsin's industrial development efforts can be judged. We may, however, be able to provide projections accurate and reliable enough to decide whether such efforts are needed.

U.S. government projections begin with the Council of Economic Advisors' assumption that a target level of unemployment will be reached. This unemployment is subtracted from a labor force projection to obtain a total employment projection. This process assumes that there will be no unemployment problem; that is, it assumes that the target level of unemployment will be reached, thanks to employment growth. However, we cannot use this assumption to determine whether employment will grow fast enough to reduce unemployment.

The labor force of 1990 and 1995 has already been born. The standard method of projecting the labor force is to apply age and sex specific labor force participation rates to the working age population. The Wisconsin 1984 Planning Information for Employment, Training and Industrial Development* describes this process and the estimates obtained, assuming our normal past experience of no net migration will change and a temporary exception (net outmigration) will continue.

The natural labor force growth projection between 1985 and 1990 is 1.44 percent per year, which is near the rates of the 1950's and 1960's but lower than that of the seventies. By 1990 to 1995, the growth rate is projected to be only 1.01 percent per year.

Between 1980 and 1984 Wisconsin experienced a surprisingly large net outmigration. The Census estimates that we lost 800 people per month between 1980 and 1981. We lost 2,000 people per month between 1981 and 1982. We lost 2,600 people per month between 1982 and 1983. We lost 900 people per month between 1983 and 1984.

If we assume that the 1980-1984 experience will continue, this outmigration becomes more important than natural population and participation rate changes in determining the size of our future labor force. We developed base-line projections assuming that the 1980-1984 labor force experience will continue. Thus far in 1985, however, the State Demographic Services Center reports the amount of net outmigration has declined further and is expected to be 2,500 to 3,000 for all of 1985.

The base-line projections simply assume that the recent labor force experience from 1980 to 1985, which includes both recessionary and expansionary business periods and the topping out of the rapid rates of labor force growth experienced since 1970, will continue for the next decade. The smaller employment gains between 1980 and 1985 were also assumed to continue.

---

*Wisconsin Department of Industry, Labor and Human Relations, Labor Market Information Bureau, September 1984.

During the 1980-1985 period, the labor force will have expanded 3.5 percent while employment will have expanded 2.2 percent, with a resulting increase in the number of unemployed.

Continuing these base-line trends results in an increase in unemployment from an estimated 203,000 in 1985 to 239,000 in 1990 and 276,800 in 1995. An increase of 36,000 additional jobs would have to occur for unemployment to remain at the 1985 level in 1990; and 74,800 additional jobs are required to keep unemployment at the 1985 level thru 1995.

During the 1982 to 1984 recovery from the recession, Wisconsin employment grew by 38,000 jobs or 1.6 percent over that two year period. Much of this improvement is one time only, resulting from a rebound from temporary recessionary losses rather than new growth and will not continue into the future.

The labor force had been expected to grow 38,000 per year, double the amount of actual 1982-84 employment growth. Instead, the labor force decreased by 45,000 between 1982 and 1984 as net outmigration continued. Most of the reduction in our unemployment rate during this period is due to this drop in the labor force. This labor force drop is not expected to continue nor will we revert back to the strong labor force growth rates experienced between 1980 and 1982 in this base-line projection.

In addition, the national economy is not expected to maintain its 1982-1984 recovery growth rate even if there is not another recession. If growth in the national economy does slow down, it is probably not at all pessimistic to assume a continued Wisconsin employment growth of 0.7 percent per year, the rate experienced from 1980 thru 1985. And, if this growth rate in employment continues for Wisconsin, then we will have higher unemployment and/or net outmigration.

STATE OF WISCONSIN - TOTAL

Poverty status of families with female head in 1979 by presence and age of children.

Ages of Related Children in the Household:	Below Poverty	Above Poverty	Total
Under 6 yrs. only	10,492	9,853	20,345
6 - 17 yrs. only	12,122	40,907	53,029
Both age groups	8,652	6,877	15,529
No related children	2,157	42,253	44,410
TOTAL	33,423	99,890	133,313

Ages of Related Children in the Household:	Below Poverty	Above Poverty	Total
Under 6 yrs. only	31.4	9.9	15.3
6 - 17 yrs. only	36.3	41.0	39.8
Both age groups	25.9	6.9	11.6
No related children	6.5	42.3	33.3
TOTAL	100.0	100.0	100.0

Section B. Women and Minorities: Their Proportions Grow In The Professional Workforce In The United States

The 1984 annual edition of Professional Women and Minorities records the increasing participation of women and minorities in the professions, noting, in particular, gains by women. The Scientific Manpower Commission, which sponsored the study, reports these national findings:

Women. In 1970, women earned 41.5 percent of the bachelor's degrees, 39.7 percent of the master's degrees, and 13.3 percent of the doctorate degrees awarded. However, by 1982, women were earning more than half of the bachelor's (50.3 percent) and master's (50.8 percent) degrees and 32 percent of the doctorates.

Despite the entry of so many women, growth of the professional labor force has slowed since the 1960's. This is especially evident in science and engineering, where the number of bachelor's degrees rose less than 1 percent between 1974 and 1982, even though there was a 21 percent increase in the number of women earning these degrees.

At the doctoral level, while total science and engineering degree awards declined slightly from 1973 to 1983, the change resulted from a drop of 15.4 percent in the number awarded to men and an increase in the number awarded to women. By 1983, the proportion of women with these degrees had risen to 25.7 percent from 12.9 percent in 1973.

Although the female proportion of scientists in the labor force is still below their proportion in recent graduating classes, women now make up 41 percent of life scientists, 23 percent of chemists, 18 percent of geological scientists, 30 percent of mathematicians and computer specialists, 6 percent of engineers, and 57 percent of psychologists. Their proportions are less in the doctoral population, but are growing.

The growth in the number of female engineers has been so rapid in the past decade that their 5 percent proportion in the work force is well below their present proportion among students and graduates. Their share of bachelor's degrees has grown from less than 1 percent in 1970 to 13.2 percent in 1983; from less than 1 percent to 9.0 percent at the master's level; and from 0.9 percent to 4.7 percent at the doctoral level. The fall 1983 freshman class includes 17 percent women.

Minorities. The report also shows that minorities are increasing their participation in the engineering field--growing from 0.9 percent of bachelor's graduates in 1970 to 9.5 percent in 1983. Asian/Pacific Islanders had the largest representation of any minority group in this field, having doubled their share of all engineering degrees since 1973. The number of black engineers graduating at the bachelor's level had risen from 657 in 1973 to 1,842 in 1983, while their proportion of total graduates had moved from 1.5 to 2.5 percent.

Except for Asian/Pacific Islanders, minorities continue to be underrepresented in the physical and mathematical sciences, where they earned 9.6 percent of the bachelor's, 7.4 percent of the master's, and 5.3 percent of the doctorate degrees given in 1982. However, a significant percentage of these degrees, especially at the graduate level, are earned by Asian Americans.

Particularly at the graduate level, the proportions of graduates who are foreign nationals on temporary visas has grown significantly over the decade. In engineering, for example, foreign students earned 3.3 percent of the bachelor's, 11.9 percent of the master's, and 12.1 percent of the doctorate degrees awarded by U.S. schools in 1969. By 1983, their share had risen to 8.5 percent of the bachelor's, 25.8 percent of the master's, and 39.4 percent of the doctorate degrees.

Women and minorities. In the professional fields, both women and minorities have substantially increased their proportion of graduates, and, to a lesser extent, of the labor force. Women earned 27 percent of the medical degrees awarded in 1983, and minorities, 10 percent. Their proportionate shares in 1971 were 9.2 and 0.2 percent. Women are now 16 percent of all physicians, and minorities, 17 percent. Women are 16 percent of lawyers, 27 percent of pharmacists and 38 percent of economists. Minorities constitute 5 percent of architects, 7.5 percent of dentists and 5.5 percent of lawyers.

Women's and minorities' employment in higher education had grown slowly during the 1970's. Women continue to be disproportionately overrepresented among nonfaculty researchers in higher education, while men are disproportionately overrepresented in the tenured faculty. In 1983, women accounted for 19 percent of faculty in universities and 37 percent of faculty in public 2-year colleges. Only 51 percent of the female faculty in all higher educational institutions had tenure in 1983, compared with 70 percent of the male faculty. Women's proportion among scientists and engineers at academic institutions has increased slowly. Between 1974 and 1983, women rose from 13.4 to 17.6 percent of mathematicians; from 9.8 to 13 percent of chemists; from 19.7 to 24.8 percent of biologists and from 21.3 to 26.5 percent of psychologists employed at academic institutions. More than half of the college teachers in English, foreign languages, health specialties, and home economics are women, but they are less than 5 percent of the total in engineering and physics.

Wages, Male and Female Dominated Occupations

What is used as evidence by comparable worth-for-women advocates, eagerly sought by employers, and read all over? A wage survey. And, Wisconsin's Department of Industry, Labor and Human Relations has just completed a survey of wages for over 400 occupations throughout the state.

Wage surveys serve many purposes. Wage rates for occupations are the information that employers most often request from labor market analysts. Employers need to know a competitive wage offer when bidding for help in the labor market, and they need to know a reasonable wage rate when negotiating a contract with a labor union.

In conjunction with other data, the wage survey can be a powerful research tool. Determining the concentration of women in low-wage occupations ranks high in priority of research possibilities. Question: X percent of working women are employed in only X number of occupations, and those are low-wage occupations - true or false? The question is currently one of keen interest.

The latest departmental wage survey did not distinguish between male and female employees. By using 1980 Census data, labor market analysts determined the extent of both men's and women's concentration within a limited number of occupational categories. By stratifying occupations according to the men and women employed, analysts culled the occupations employing the most people, noted the concentration of men and women in those occupations and compared the wages of the predominantly women's occupations to the wages of men's, as found in the wage survey.

How valid is a merger of 1980 Census employment data and the 1985 wage survey? Each document is a snapshot of a situation at two different times - five years apart. If the occupational pattern of total employment changes slowly, or very little, the census data is useful for ranking occupations.

To determine the degree of change in employment patterns, analysts checked national employment figures from the 1980 Census and also from the 1983 Current Population Survey. They noted the specific occupations on each source, checked each occupation's portion of total employment, looked at the concentration of women employed in the occupations during each year, and concluded that occupational structure changed very slowly during that time. The analysts, therefore, assumed that the state's occupational structure represented on the wage survey is similar to the Wisconsin 1980 Census employment pattern.

The analysts did not group or cluster the occupational categories, except for three areas. They added elementary to secondary school teachers, they totaled several sales worker categories which the census separates according to the commodity sold, and they considered cashiers and counter clerks similar enough to add together as one group.

To determine the concentration of women within an occupation, the analysts found occupations within which 11,000 women were employed, representing 60 percent of the total. The same methodology determined men's occupational concentration.

The wage survey included only private employers, no governmental units. So, analysts obtained an average teacher's salary from the state's Department of Public Instruction. Also, farmers are not included though they do rank in the top employment categories for both men and women.

On the 1980 Census, workers placed themselves in various occupations. As a result, a large amount of employment shows up in various "not elsewhere classified" categories which have no counterpart on the wage survey.

What are the results? Women are concentrated in 14 occupational categories. In 1980, these 14 categories compose 45 percent of total women's employment throughout the state. However, men, too, are concentrated in occupations, though somewhat less than women. Nineteen occupations contain about 38 percent of employed men. And, there are wage differences.*

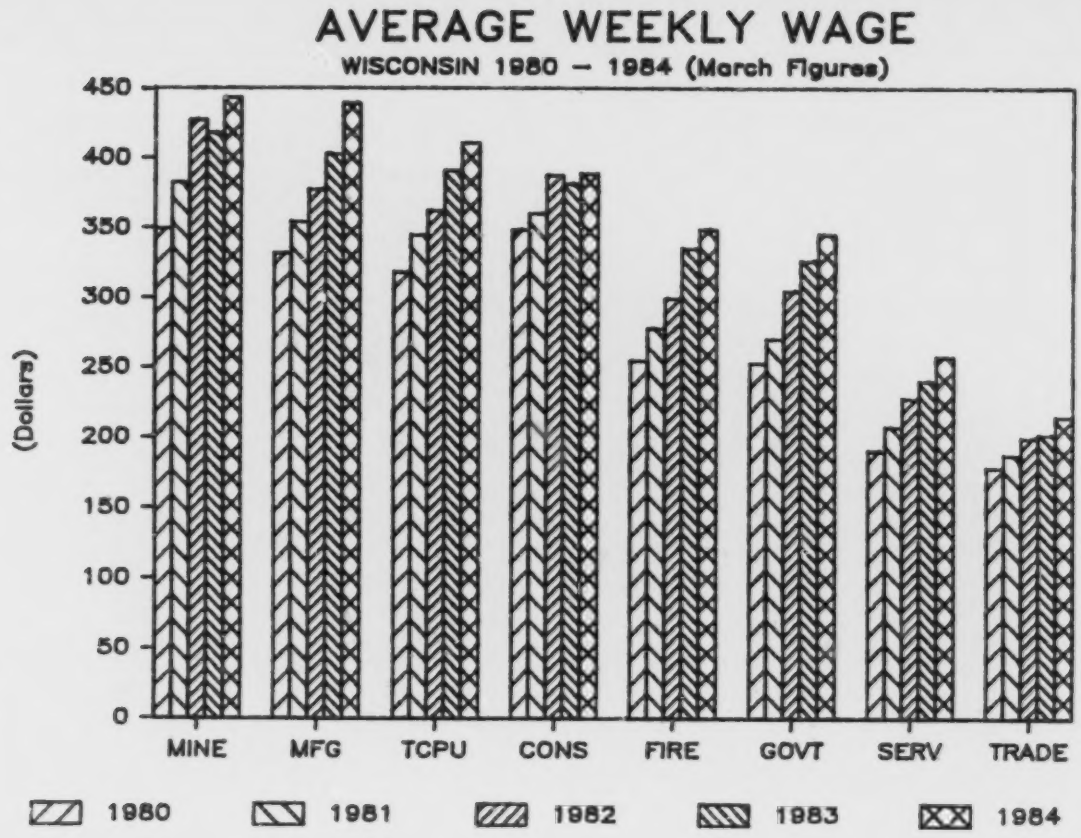
*The Bureau of the Census recently reported on an issue often cited as being one of the main reasons women earn less than men; that is, the issue of differences in labor force attachment, or the extent of work force interruptions, among women and men. The report is based on an extensive study of data from 1979 Income Survey Development Program. A summary of the research prepared for the Monthly Labor Review concludes: "...work interruptions explain only a small part of the earnings disparity between men and women....If women had the same experience, interruptions, and education as men, the earnings gap would be reduced by only 14.6 percent."
See: "Work Interruptions and the Female-Male Earnings Gap", Monthly Labor Review, February 1985, BLS, Dept. of Labor.

TOP MALE OCCUPATIONS IN WISCONSIN AND AVERAGE WAGE
(Occupations with at least 11,000 employed men, and in which men compose at least 60% of total employment)

Occupations Ranked by Employment	% Men in Occupation	Average Wage
1. Administrators & Mgrs., Not elsewhere classified	76.8	N.A.
2. Truck Drivers, Heavy	98.1	$ 9.54/hr.
3. Machine Operators, misc. or not specified	74.6	N.A.
4. Janitors & Cleaners	73.3	$ 6.08/hr.
5. Supervisors, Production	88.1	N.A.
6. Carpenters	98.6	$11.28/hr.
7. Laborers, excl. construction	77.2	N.A.
8. Farm Workers	67.5	N.A.
9. Welders & Cutters	92.8	$11.00/hr.
10. Sales Representatives	87.8	$10.55/hr.
11. Automobile Mechanics	98.8	$ 9.02/hr.
12. Manager, Sales	70.9	$ 9.10/hr.
13. General Machinists	95.4	$ 9.43/hr.
14. Superintendent, Const.	99.2	$15.07/hr.
15. Construction Worker	97.5	$11.06/hr.
16. Industrial Truck Operators	94.5	$ 9.64/hr.
17. Electricians	98.1	$14.33/hr.
18. Maintenance Mechanic	97.0	$ 9.86/hr.
19. Accountants and Auditors	63.4	$10.93/hr.

TOP FEMALE OCCUPATIONS IN WISCONSIN AND AVERAGE WAGE
(Occupations with at least 11,000 employed women and in which women compose at least 60% of total employment)

Occupation Ranked by Employment	% Women in Occupation	Average Wage
1. Secretary	99.0	$ 6.57/hr.
2. School Teachers, Elementary and Secondary	66.5	$24,581/yr.
3. Sales Workers	62.2	$ 4.53/hr.
4. Bookkeepers (Accounting and Auditing)	90.8	$ 6.67/hr.
5. Waitresses	96.1	$ 3.50/hr.,excl.tips
6. Nursing Aides	91.5	$ 5.24/hr.
7. Cashiers, sales and and Counter Clerks	87.8	$ 3.96/hr.
8. General Office Clerks	86.5	$ 5.91/hr.
9. Registered Nurses	96.4	$10.52/hr.
10. Cooks, excl. short-order	64.2	$ 4.63/hr.
11. Typist	97.9	$ 5.87/hr.
12. Hand Packers & Packagers	69.9	$ 6.50/hr.
13. Child Care Workers	90.8	$ 4.41/hr.
14. Receptionist	97.0	$ 5.32/hr.



The above and following graphs and charts use several abbreviations that may not be familiar with everyone. CONS equals construction; MFG means manufacturing; TCPU stands for Transportation, Communication, and Public Utilities; FIRE means Finance, Insurance, and Real Estate; SERV means Services; and GOVT means government including schools.

The Average Weekly Wage graph shows a number of interesting facts. In 1980 through 1984, the same four industries remained as the top paying industries even though their ranking changed.

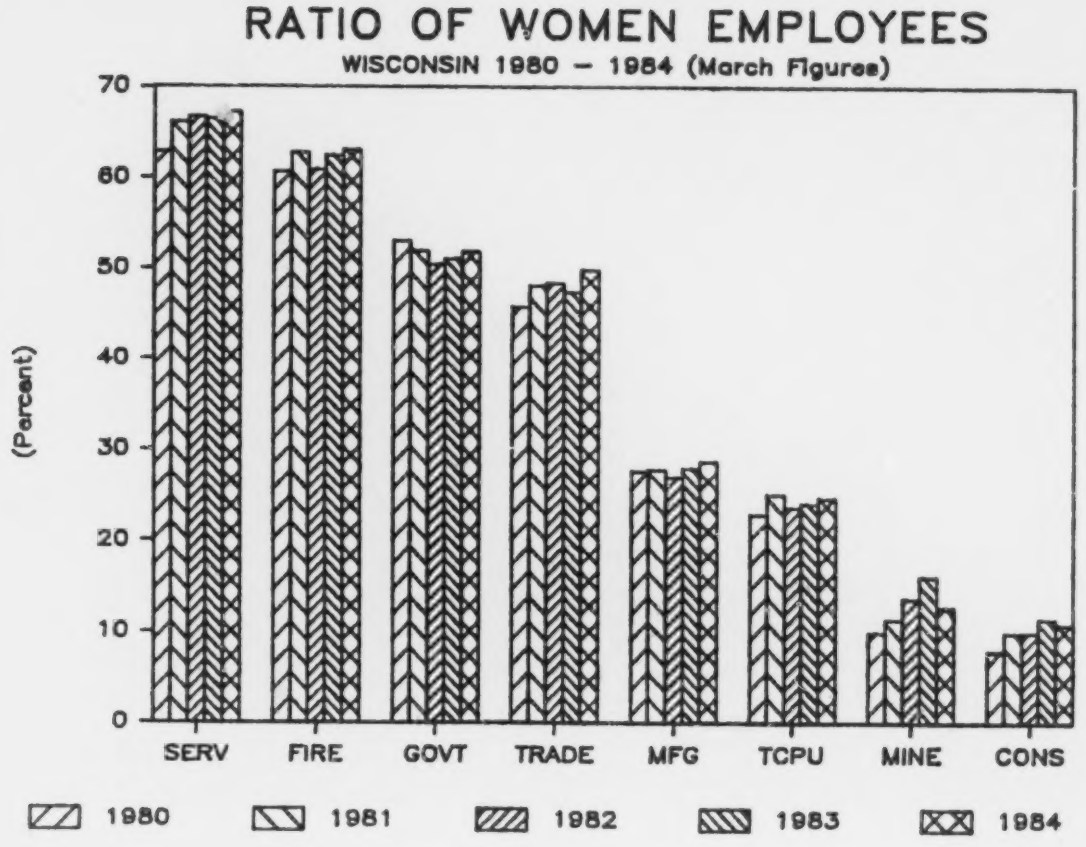
Their ranking in order of weekly wage in 1980 was:

Construction.	$349.83
Mining.	349.74
Manufacturing	332.33
Trans., Comm., & Public Utilities	318.79

In 1984 the same four industries remained the top paying industries although their ranking changed somewhat.

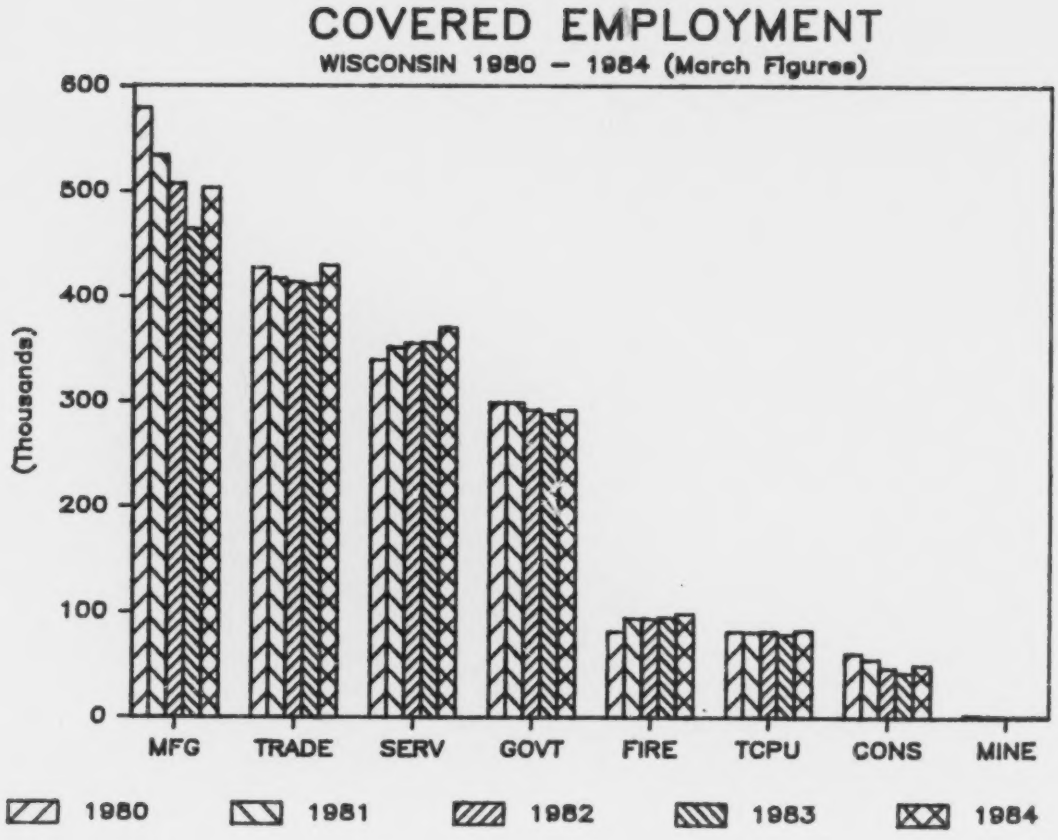
		% Increase
Mining	$443.50	26.8%
Manufacturing.	439.69	32.3%
Trans., Comm., & Public Utilities. .	411.25	29.0%
Construction	389.69	11.4%

Although wages in manufacturing ranked second in 1984, the overall number of employees, including women, dropped. Some of these people apparently moved into the expanding industries with a lower average weekly wage, namely FIRE, TRADE, and SERVICE.



The ratio of women employees in the eight industry clusters has not varied by more than 4.3 percent over the 5 year period 1980-1984. The only industry to have a lower ratio of women in 1984 compared to 1980 was government. This ratio dropped from 53.1 percent in 1980 to 51.9 percent in 1984. The largest single contributing factor to this drop in percentage or ratio was the layoff of elementary teachers which is a female dominated field.

The Service industry, a female dominated industry with 67.2 percent (1984) of the workforce being women, also made the largest percentage gain from 1980 to 1984 with a 4.3 percent increase. The ratio of women in the Manufacturing industry remained relatively stable throughout the five year period with a modest gain of 1.1 percent. This indicates a stabilization of women in the Manufacturing industry because the overall employment in the industry declined from 579,400 (1980) to 504,000 (1984) and the women employed dropped from a high of 159,914 (1980) to 144,648 (1984).



The Service industry employs the largest number of females with a total of 249,110 female employees in 1984. The Service industry also made the largest gain in total numbers of women employees from 1980 to 1984 with a gain of 35,805. This equates to a 16.9 percent increase in total number of women in the Service industry. The FIRE industry had the largest percentage gain of 24.9 percent with an increase of 12,975 women from a 1980 figure of 49,592 to a 1984 figure of 62,027. Overall employment increased from 81,700 in 1980 to 98,300, an increase of 16,600 or 20.3 percent. The Manufacturing industry had a loss of 15,266 women from 1980 to 1984. This equates to 9.5 percent of the 1980 women workforce in Manufacturing. It thus appears that many of the women who once worked in the Manufacturing industry are now working in the Trade, FIRE, and SERVICE industries.

Section C. Wisconsin's Projected Population - 1980-2010

Wisconsin's fertility rate has generally mirrored the national average for the past decade. The middle projection series which is generally reflective of the nation as a whole, has been lowered from 2.1 to 1.9 children per woman. Wisconsin's projection is slightly lower than this. Between 1975 and 1985, Wisconsin had a big out-migration of people. Current indications are that this trend is tapering off and in the near future out-migration of population will equal or nearly equal in-migration of people.

The following graphs depict the Wisconsin projected population by sex and age through the year 2010. The data was developed at the Applied Population Laboratory, Department of Rural Sociology, UW-Madison Extension. However, after researching population projections, it was found that three experts will generally have three different opinions. Since Wisconsin's population projections reflect the nation's, it was felt appropriate to include an article found in American Demographics, January 1985, describing different theories concerning population growth.

HOW TO FORECAST BIRTHS (AND BE RIGHT)
By Jane Newitt

"Fertility forecasting has been a gratifying game for the past decade. Nearly everyone who plays it has come off looking good. Yet the real news has been neglected because it is no news at all. The remarkable turn of events is not that the annual number of births has risen from 3.1 million in the mid-1970's to 3.6 million in the past few years, but that the fertility rate has been stable for a decade. This may never have happened before for the U.S. population as a whole.

"Among forecasters, the Census Bureau has most directly benefited from this situation. The error in the bureau's population projections published in 1975 and 1977 was less than sixth as great as the error in its previous population projections, the bureau reported recently.* This accomplishment mainly reflects the fact that women have had babies at roughly the same rate for more than a decade.

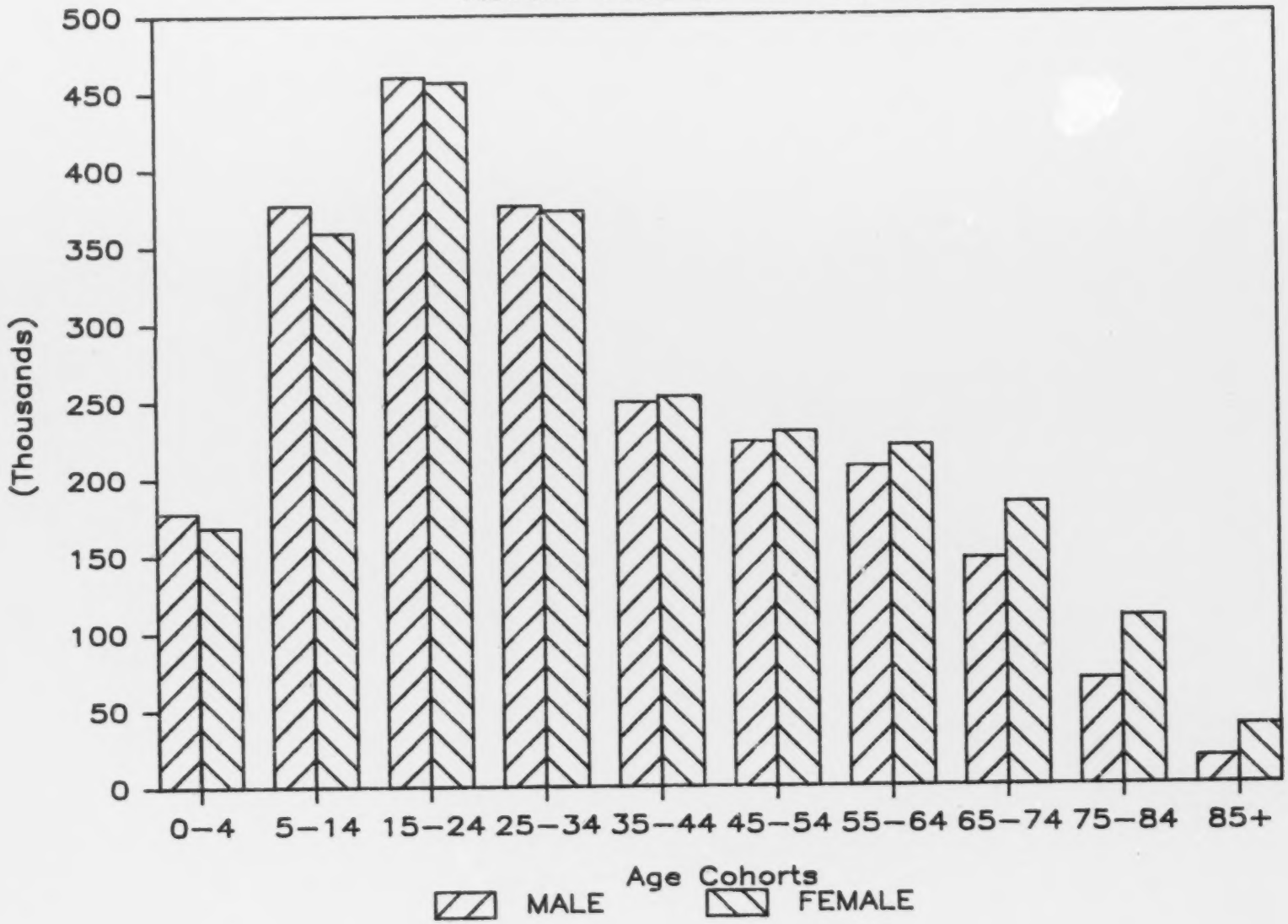
"The Census Bureau's statisticians know better than to rest on such dubious laurels. Still, their new projections (the first full set since 1977) display no innovations in fertility forecasting. The new projections introduce alternative assumptions about future mortality and immigration, resulting in more variation in the number of births, but fertility continues

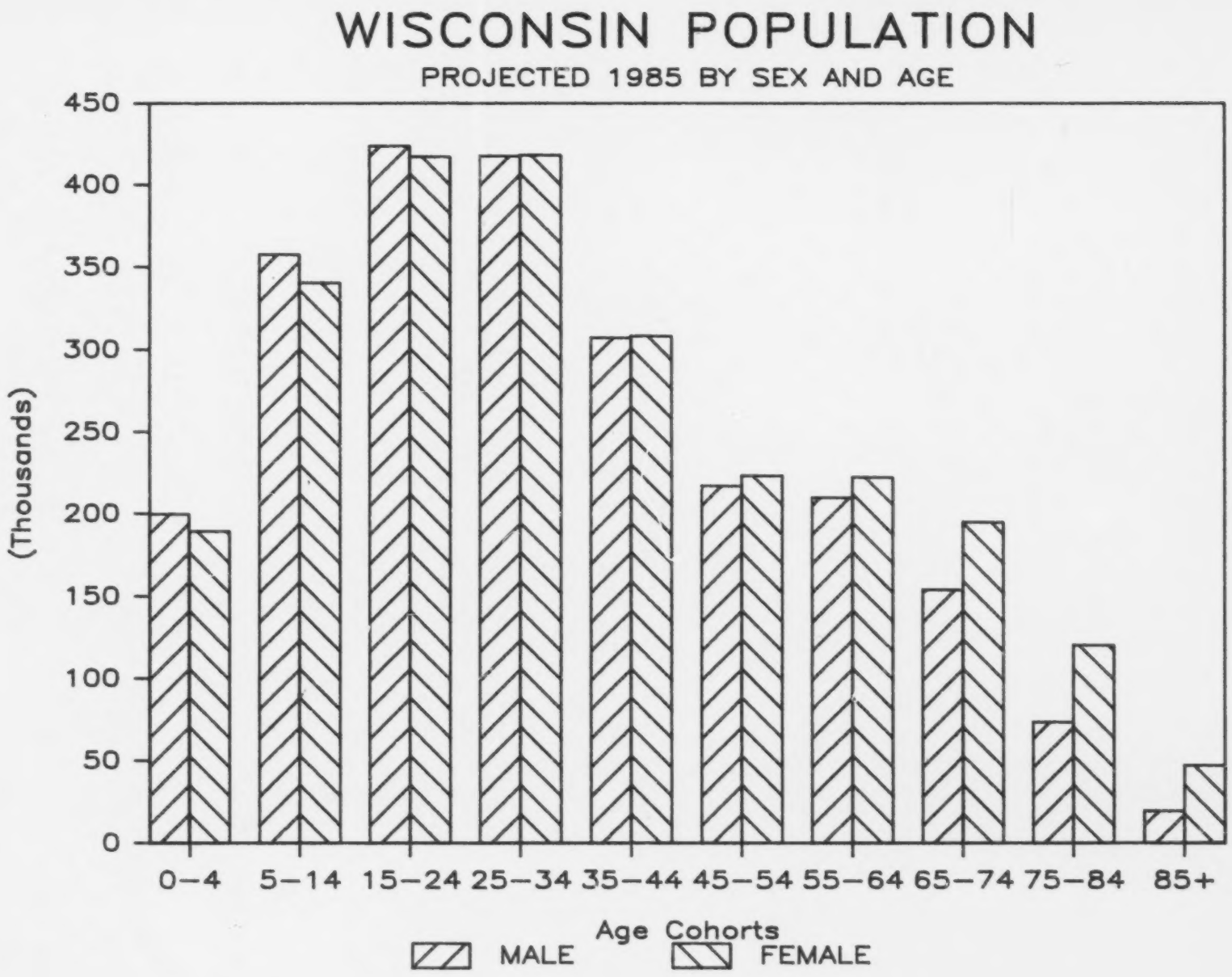
---

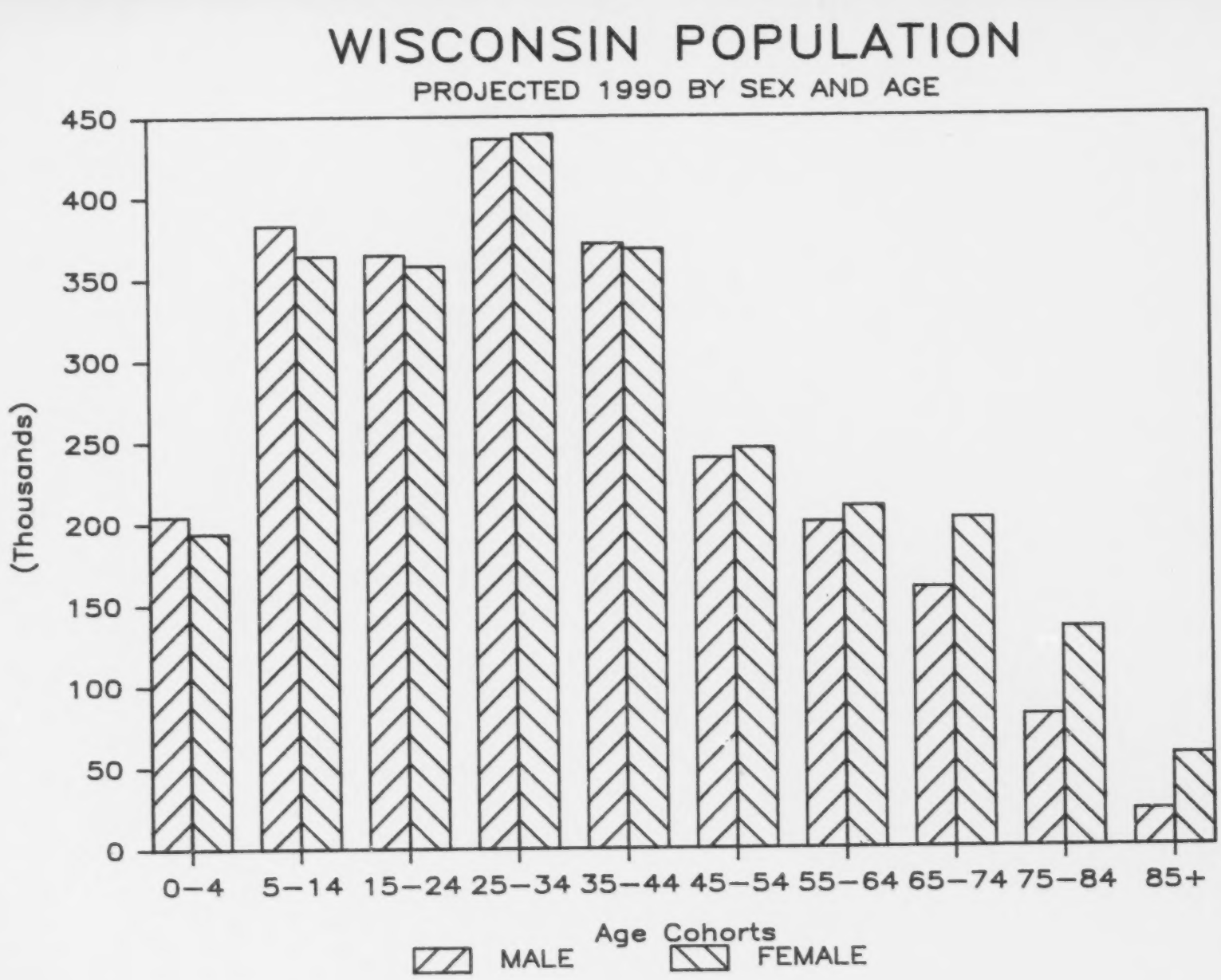
*"Projections of the Population of the United States, by Age, Sex, and Race: 1983-2080," Current Population Reports, Series P-25, No. 952, p.14.

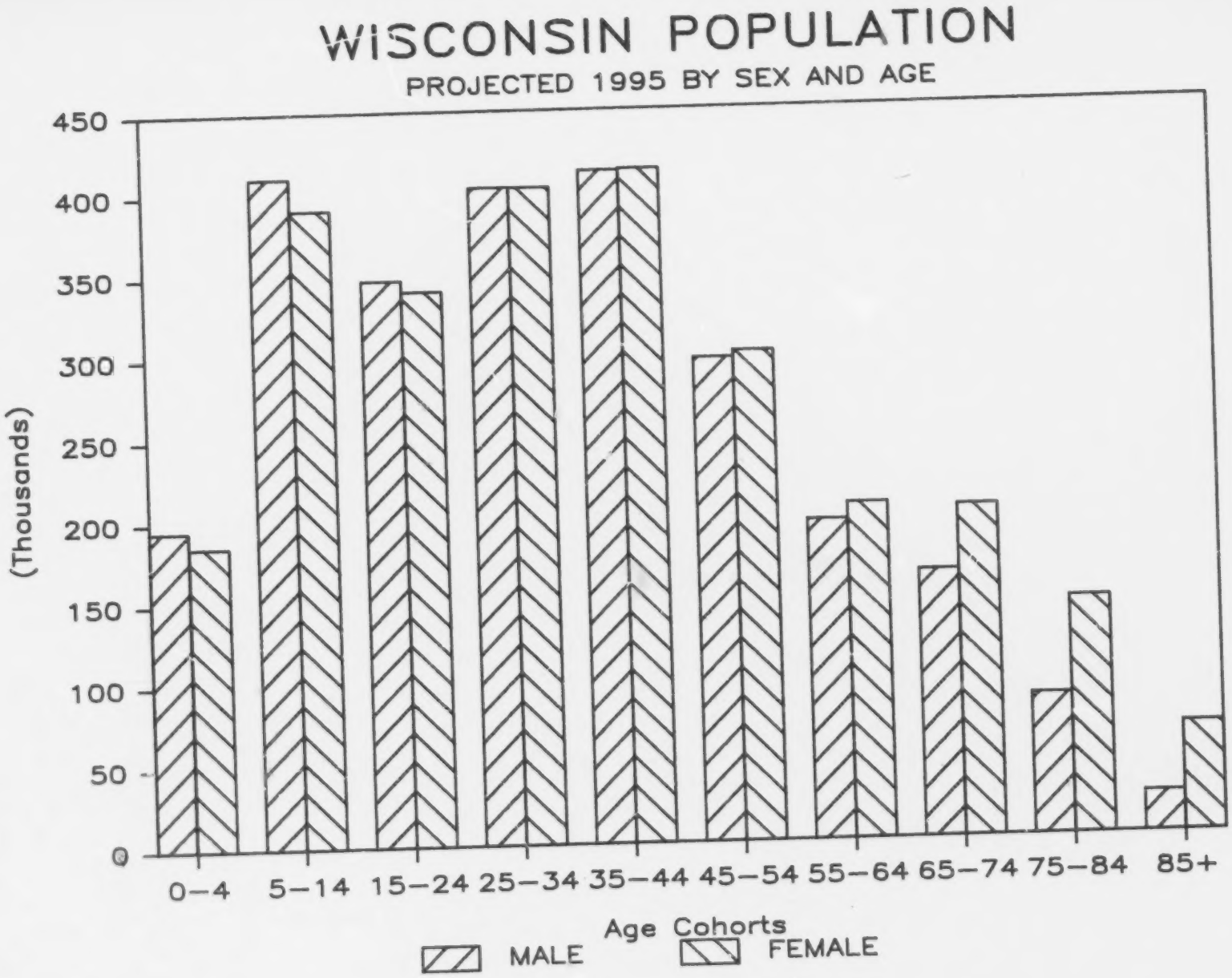
WISCONSIN POPULATION

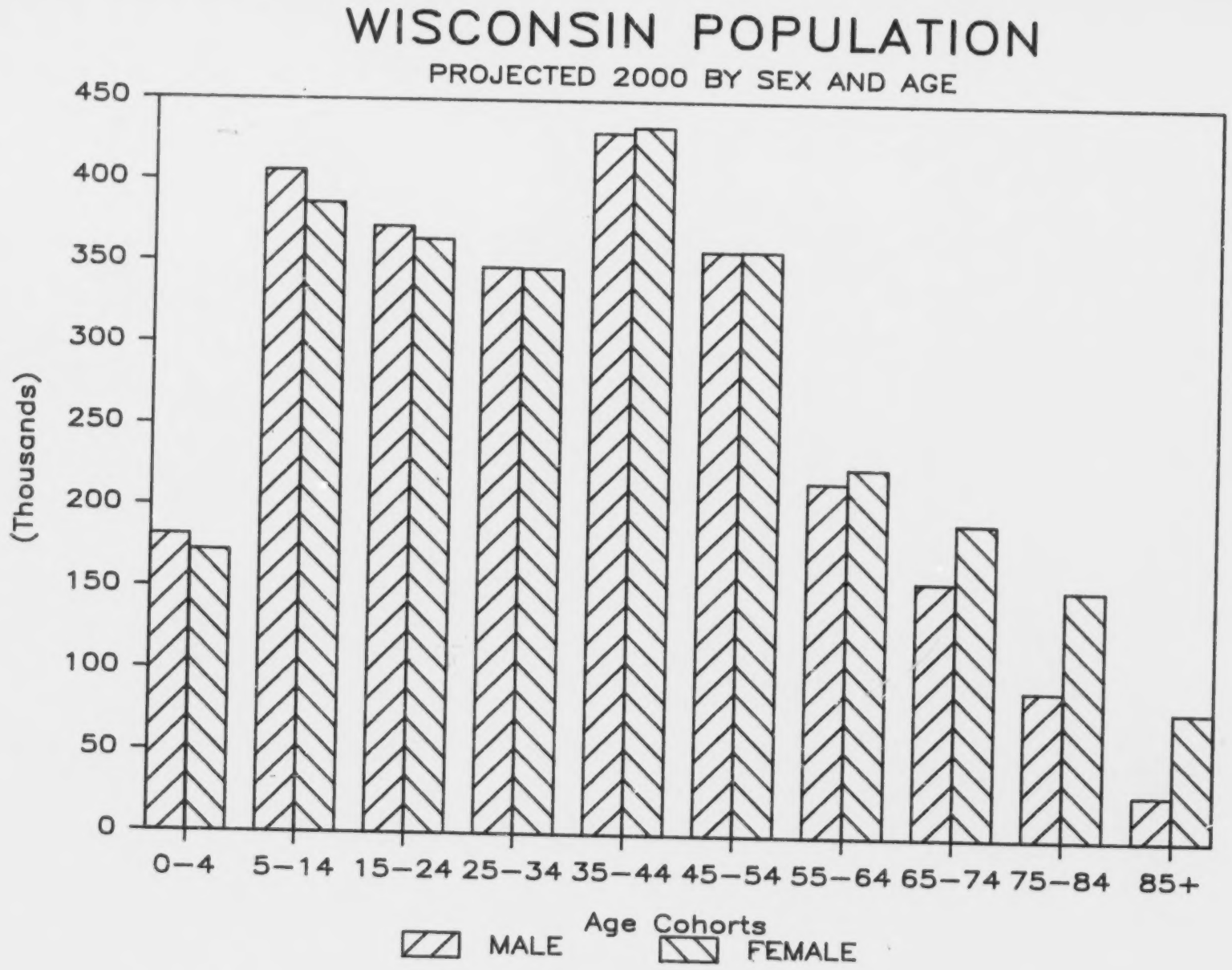
ACTUAL 1980 BY SEX AND AGE

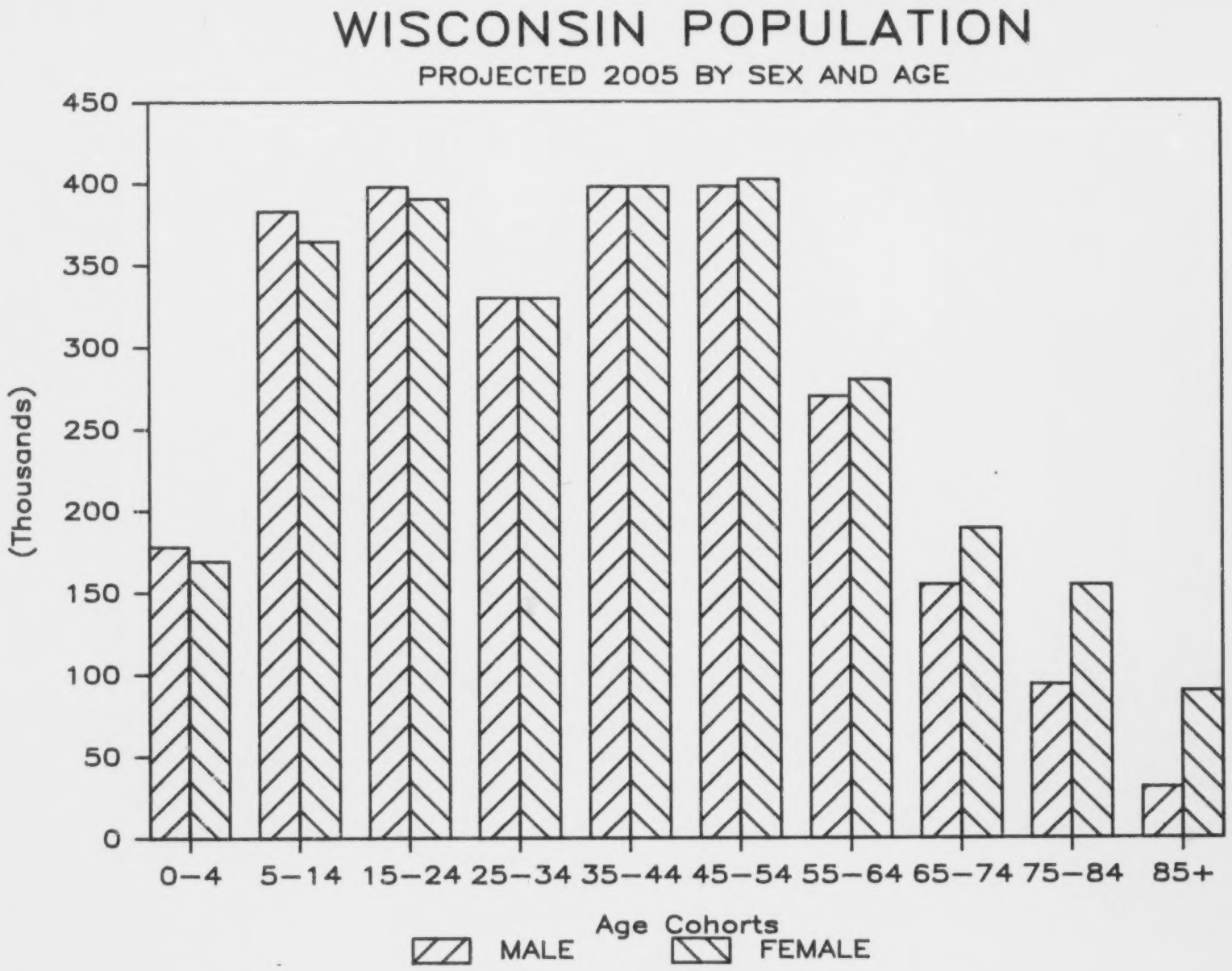


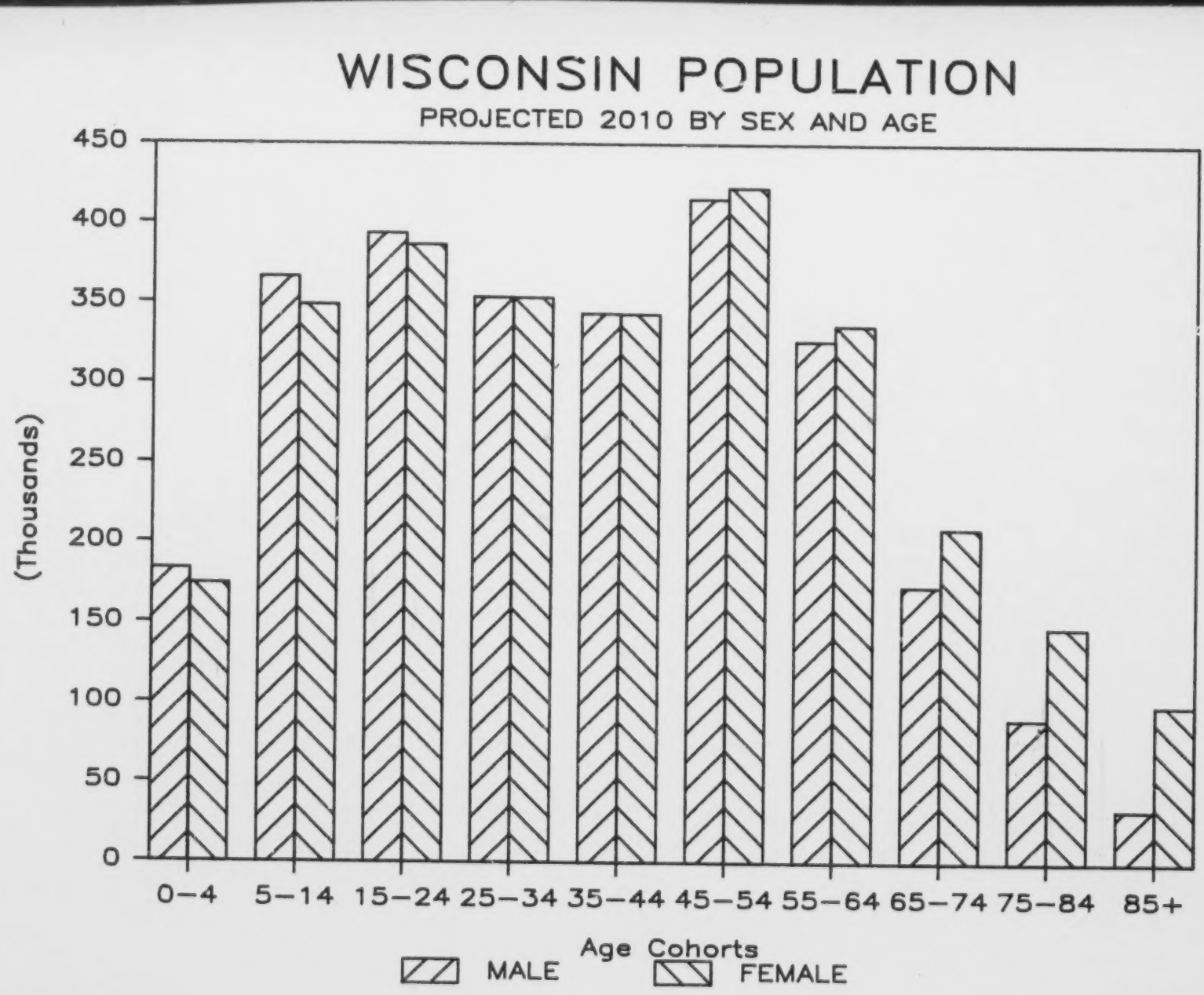

WISCONSIN POPULATION
PROJECTED 1985 BY SEX AND AGE
450
400
350
300
250
200
150
100
50
0
(Thousands)
0–4
5–14
15–24
25–34
35–44
45–54
55–64
65–74
75–84
85+
Age Cohorts
MALE
FEMALE


WISCONSIN POPULATION
PROJECTED 1990 BY SEX AND AGE
450
400
350
300
250
200
150
100
50
0
(Thousands)
0–4
5–14
15–24
25–34
35–44
45–54
55–64
65–74
75–84
85+
Age Cohorts
MALE
FEMALE


WISCONSIN POPULATION
PROJECTED 1995 BY SEX AND AGE
450
400
350
300
250
200
150
100
50
0
(Thousands)
0–4
5–14
15–24
25–34
35–44
45–54
55–64
65–74
75–84
85+
Age Cohorts
MALE
FEMALE


WISCONSIN POPULATION
PROJECTED 2000 BY SEX AND AGE
450
400
350
300
250
200
150
100
50
0
(Thousands)
0–4
5–14
15–24
25–34
35–44
45–54
55–64
65–74
75–84
85+
Age Cohorts
MALE
FEMALE


WISCONSIN POPULATION
PROJECTED 2005 BY SEX AND AGE
450
400
350
300
250
200
150
100
50
0
(Thousands)
0–4
5–14
15–24
25–34
35–44
45–54
55–64
65–74
75–84
85+
Age Cohorts
MALE
FEMALE


WISCONSIN POPULATION
PROJECTED 2010 BY SEX AND AGE
450
400
350
300
250
200
150
100
50
0
(Thousands)
0–4
5–14
15–24
25–34
35–44
45–54
55–64
65–74
75–84
85+
Age Cohorts
MALE
FEMALE

to come in three flavors: high, middle, and low. The bureau continues to assume that fertility will stay at a specified level, making births strictly proportional to the number of women of childbearing age.

"The bureau no longer projects that black and total fertility will be identical by 2000; this convergence has been delayed to 2050. In addition, the fertility level for the "middle" projection series has been lowered from 2.1 children per woman to 1.9. Childbearing has not bounced back to "replacement level" as conservative opinion expected in 1977.

"In the new projections, the low fertility assumption is 1.6 births per women and the high is 2.3, both lower than in the bureau's previous projection series. The bureau cautions that the high assumption of 2.3 children per woman is "lower than actual U.S. fertility has ever been except for a few years during the Depression and the period since 1972." Yet the figure seems adequate, the authors declare, "given our present knowledge." Conversely, the low projection is not low enough to satisfy all experts--after all, West German fertility has fallen to 1.4 children per woman. The bureau opted for 1.6 because American women continue to display "clear reluctance...to say they want fewer than two children."

"The new range for fertility is narrower than ever before. By 1988, according to the projections, fertility will range only from 61 to 71 births per 1,000 women aged 15 to 44. In the 1970 series of projections, the fertility range projected for 1975 was twice as great. But the actual fertility rate in 1975 fell far below the projected range.

"Although the new high and low assumptions about fertility (2.3 and 1.6 children per woman) both round to 2 children per woman, the unrounded rates yield spectacular differences by 2080: Given the middle mortality and immigration assumptions, the number of children under five in 2080 would be 9.6 million with low fertility and 32.8 million with high fertility. Presently there are 18.2 million children under age five. Even more dramatic, when the highest and lowest levels of fertility, mortality, and immigration are compared, births a mere ten years hence range from 3.1 to 4.1 million.

"Most data-users will go with the bureau's middle series, in which births peak at less than 3.9 million in the late 1980's, slip to 3.5 million by the century's end, and inch up to 3.7 million a decade later. This is not much more promising, however, than picking a lottery number, given the lack of any recent trends in fertility and the fact that the shift from a large to a small generation at childbearing age has yet to occur.

NARROWING THE ODDS

"Two theories have ruled the fertility debate in the past 25 years: the first is a linear theory, whose proponents argue that the long-term fertility decline will persist; the second is a cyclical theory whose proponents argue that fertility is ruled by generational size. Unlike the Census Bureau, both theories project continuing changes in family size. But they view the past in strikingly different ways.

"According to the linear theory, the postwar baby boom was a fluke. As late as 1953, nearly all demographic experts were linearists who regarded the baby boom as little more than an overlap between catch-up births deferred by

the Depression and World War II, and a fad for having babies earlier and closer together. But the years from 1940 to 1960 saw a doubling of the birth rate for third children and a tripling of the rate for fourth children. And the proportion of Gallup respondents considering four or more children their "ideal family size" jumped from one-third in 1936 to 49 percent in 1945. In recent years it has plummeted to 14 percent.

"Linear theory suffered during the peak of the baby boom, but it recovered its stature when fertility fell again in the late 1960's and in the 1970's. Linear theorists in the United States today esteem low fertility and childlessness. They emphasize that the absolute increase of the U.S. population in the 1970's was the second-highest ever. They report without alarm, that 30 percent of American women born at the baby-boom's peak may have one child or none. Looking ahead, Charles Westoff goes further. Given recent trends on both sides of the Atlantic, "it is not difficult to visualize a society in which perhaps one-third of women never have any children...."*

"Linear theory has recently split into three camps. The traditionalists associate fertility decline with rising affluence. The pessimists associate it with growing economic scarcity. The third camp is the pessimists who are not pessimistic, declaring that economic and fertility declines are not only necessary to survival but will make us feel better.

"Linear theory has a basic ambiguity: When does it stop? Will West Germany's population really fall from 61 to 38 million in the next 50 years? How will Americans react if the future follows the Census Bureau's lowest projection--1.6 children per woman and 250,000 net immigration--which leads to a 71 million (27 percent) drop in population between 2017 and 2080?

"This country as yet shows little tendency to urge its women to have more children, unlike some of the European countries. Partly because the baby boom was so large, Americans can imagine more readily than Europeans a new era of high fertility starting spontaneously. A mere 20 years ago many social scientists were convinced that the shift from a two- to a three-child family would last until the present time. Children, it was said, were consumer goods, of which people could now afford more than their parents. Like cars and pets and power mowers, children were integral to the suburban lifestyle.

THE CYCLE OF BOOM AND BUST

"That linear decline has been replaced by an intergenerational fertility cycle, in which big generations produce small ones, is a theory which has in fact fit the recent fertility pattern. The fertility drop in the 1960's was forecast by the theorists before it happened, predicted because large numbers of workers depressed young people's earnings relative to their parents'. The theorists also predicted that the shift to more women than men at the prime ages for marriage (the "marriage squeeze") would produce later marriages, and perhaps reduce fertility.

"The academic repute the cyclicalists gained by being right in the 1960's was eroded when fertility plunged again in the 1970's--which their theories did not forecast. Some early cyclicalists backed off; others used hindsight to

*Charles F. Westoff, "Some Speculations on the Future of Marriage and Fertility," Family Planning Perspectives, March/April 1978, p. 82.

refine their hypotheses, and the ranks were swelled by enthusiasts who perceived generational "crowding" and "thinning" as the answer for mysteries ranging from declining academic achievement to rising youthful suicide rates.

"Cyclical theorists have addressed historical realities that the Census Bureau's 30 new population projections ignore. However, the logical move toward a unified cyclical theory of fertility has been impeded by the compartmentalized structure of scholarly inquiry, resulting in intramural squabbles based on gimmicky number-crunching. Scholars like Richard Easterlin, who attempt to break out of their disciplinary boxes, are accused of popularization and lack of methodological rigor."

"In addition, some important studies have not been done, such as surveying why people's family size is different from their parents'. A survey such as this could still be conducted covering a period all the way back to the fertility decline of the 1920's. It is a frustration to see this opportunity slipping away.

"What might such a survey contribute to the cyclical theory? Most respondents would be oblivious to the nudges toward higher or lower fertility that the relative-wage and marriage-squeeze theories propose. These effects operated behind the scenes. The Depression and World War II would often be mentioned as changing individuals' behavior from what they thought of as normal. An intriguing question is what factors would be cited as influencing attitudes in the 1960's when older and younger women alike decided to have fewer children.

"A key question for cyclical theory is whether intergenerational fertility swings dwindle over time and whether they can be disrupted by other events. A survey might find that the youth culture in each generation wanted to do things differently from its parents. These were the first generations whose early images of the good life were shaped by the movies and later by television. Because of this, lifestyle fashions became national phenomena.

"Educated women and the wives of men in high-status occupations started the baby boom, as well as the recent trend toward delayed childbearing. These "elites" have been national style-setters. Before movies and television, this could not have happened. Nobody noticed that the women graduating from Vassar in 1877 through 1886, for example, had only a 51 percent marriage rate, and that the average number of children per married alumna was only 1.5.

OTHER SCENARIOS

"Cyclical theory faces its acid test in the next ten years. But the fertility forecaster has other choices beyond the linear and cyclical theories. First, short-term swings in fertility may be generated by the business cycle. As in the past, women may be more likely to become pregnant when their husbands' jobs are secure and the family's need for their earnings is least. Alternatively, married women's employment rates may now be high enough so that women are more likely to become pregnant during recessions when their own job outlook is poor. Economic models of fertility that emphasize

---

*Richard A. Easterlin, Birth and Fortune: The Impact of Numbers on Personal Welfare (N.Y.: Basic Books, 1980).

the husband's breadwinner status--as some cyclical theories have done--need to be modified to take today's realities into account.

"Second, we may be entering an era in which mass culture is giving way to mosaic culture. In recent years, black and Hispanic fertility have not been converging with white fertility, and a rise in fertility has occurred in Utah where the Mormon religion and culture dominate.

"There is always diversity. Millions of women had fewer children than their parents in the 1950's, and millions had more children than their parents in the 1970's. Magazines and television have become more segmented in recent years, targeting population subgroups. Perhaps fertility trends will do the same. The unexpected rise in black fertility, for example, may be influenced by the emphasis on "family" in television commercials with black actors. The fracturing of the media may be helping to shape an era when national fertility statistics will mask the divergent trends of large subcultures.

"A third possibility is that a pseudo baby boom, lasting long enough to fool nearly everyone, could commence in the next few years if the timing of childbearing changes. Consider the following scenario: The largest generation of young women in U.S. history is now committed to having babies later than its mothers. Delaying childbirth is a practice no longer limited to "Vassar girls." But the media has shifted its focus from touting the new woman to an emphasis on the risks that are involved in later childbearing.

"Watching this stuff on television, today's 10- and 15-year-olds (whom nobody polls) may be deciding that they too want only two children, but that it would be better to have them early, while they are young enough to enjoy them. Unlike the baby boomers, today's teenagers don't associate early childbearing with banishment from the real world. And, whether or not they know that their dwindling numbers mean more job opportunities, better wages, and a surplus of prospective husbands, these developments would help them revert to early childbearing. Those with career ambitions may follow the sample of Geraldine Ferraro, who had three children in less than five years, shortly after completing her education.

"Early childbearing by the baby bust could overlap with catch-up fertility by the baby boomers, sending births skyrocketing. The absolute number of births could easily exceed five million for five years (with little or no effect on completed family size). This would be followed by a sharp drop in births as younger and older women alike achieve their desired two children.

"Fourth, significant swings in births can result from the interaction of technology and public policy. The fertility of low-income women, for example, has been affected by trends in the availability of legal abortion. During the past 15 years, infant mortality has been reduced. The lower the rate has fallen, however, the more attention has focused on the difficulties parents face in saving babies who are severely deformed. According to one recent study, the number of infants born with physical and mental disabilities has doubled since the peak of the baby boom because technology allows these infants to live. Anxieties about bearing a defective child may now be depressing fertility, especially among women who have delayed childbearing to the age when the risks start to rise.

"The upcoming generation's fertility might also be influenced by technologies that would allow parents to choose the sex of their child. Pregnancies resulting from the temptation to try again for a boy or girl would be reduced by this technology. But the ability to select the sex of a child would also result in additional pregnancies, as would not-so-implausible future genetic fiddling that would favor genius, beauty, or athletic prowess. The perfection of such technologies could ultimately encourage one- and two-child families, but it is hard to believe that they would not trigger a colossal baby boom first.

"Conservative forecasters may balk at exotica like genetic selection, but they also balk at a steady-state fertility forecast. The steady state has no serious theory behind it. It is rooted in pre-computer computational constraints, in a preference that fertility stabilize in the vicinity of replacement level, and in business-as-usual assumptions. Nearly 200 years of American history argue that this approach is wrong."

Section D. Public Assistance Incidence in JTPA Populations by County and SDA in Wisconsin

The following tables (Table I and II) relate the incidence of public assistance recipients as a percentage of the projected JTPA eligible population in Service Delivery Areas and Counties.

TABLE I.

All of the data sources reported the number of individuals, 16 through 69, receiving benefits during a one month period in 1983. The figures are taken from one point in time and report the number of individuals receiving benefits, with the number of new recipients and terminees not being reported.

The number of AFDC and AFDC-U recipients are the number served in December 1983. The Department of Health and Social Services was not able to provide a non-duplicated count of recipients for 1983, in that the computer program does not involve any historical function.

Refugee Cash Assistance (RCA) figures represent figures provided to the Department of Health and Social Services (DH&SS) by county. Staff at DH&SS reviewed the monthly reports for the period July 1983 through December 1983, and recorded the single highest month's figure by county.

General Assistance figures represent reports by counties for the month of November 1983. The reporting format does not allow for an unduplicated count for the entire year from the reporting body. Milwaukee County has begun a new computerized Management Information System (MIS) which will be able to provide an unduplicated count for 1984.

Relief to Needy Indian Persons (RNIP) represents a mean average of individuals receiving benefits monthly in 1983. Once again, an unduplicated count for the year was not available.

Estimates of the Job Training Partnership Act (JTPA) eligible population were gained from the revised Department of Industry, Labor and Human Relations' (DILHR) Wisconsin Economic Reports for 1984.

It should be noted that the figures reported are a conservative estimate of the number of individuals receiving public assistance and should be considered as an underestimate.

TABLE II.

Table II was compiled using the same methodology as used in Table I except the estimates are the sum of the monthly number of people receiving AFDC over 14 years of age versus 16 years of age in Table I.

It is projected the ratio of JTPA eligibles to population will remain the same through 1995. The general increase in Public Assistance (PA) individuals to JTPA eligibles from 1983 to 1984 was due to the methodology involved. The 1983 totals were for individuals 16 through 69. In 1984, the age was lowered to 14, thus adding to the totals and increasing the ratio or percent of PA individuals to JTPA eligibles.

TABLE I

PUBLIC ASSISTANCE RECIPIENTS BY SERVICE DELIVERY AREAS - 1983

COUNTY	AFDC & AFDC-U	RCA	GENERAL RELIEF	RNIP	TOTAL PA POPULATION	JTPA ELIGIBLE POPULATION	PERCENT PA
Winne-Fond Lake (SDA #2)	4,304	5	953	-	5,262	18,783	28.0
Fond du Lac	1,512	-	41	-	1,553	6,796	22.9
Green Lake	361	-	1	-	362	1,744	20.8
Winnebago	2,431	5	911	-	3,347	10,243	32.7
Southeastern WI (SDA #3)	10,354	35	3,360	-	13,749	29,985	45.8
Kenosha	3,771	6	1,420	-	5,197	10,439	49.8
Racine	5,422	20	1,846	-	7,288	7,466	54.9
Walworth	1,161	9	94	-	1,264	6,270	20.2
Northern Lake Winnebago (SDA #4)	3,150	16	178	-	3,344	15,621	21.4
Calumet	326	1	24	-	351	1,606	21.9
Outagamie	1,976	15	108	-	2,099	9,713	21.6
Waupaca	848	-	46	-	894	4,302	20.8
South Central WI (SDA #5)	3,823	8	336	30	4,197	19,041	22.1
Columbia	779	-	98	-	877	3,870	22.7
Dodge	997	2	62	-	1,061	5,133	20.7
Jefferson	1,117	5	111	-	1,233	5,114	24.1
Sauk	930	1	65	30	1,026	4,897	21.0
Marathon County (SDA #6)	2,076	15	346	8	2,445	11,196	21.8
Rock County (SDA #7)	4,208	22	1,045	-	5,275	11,856	44.5
Dane County (SDA #8)	4,000	208	1,576	-	5,784	33,483	17.3
Northwest WI (SDA #9)	5,804	2	173	675	6,654	27,029	24.6
Ashland	414	2	36	181	633	2,546	24.9
Bayfield	453	-	7	135	595	2,380	25.0
Burnett	479	-	3	-	482	2,641	18.3
Douglas	1,986	-	63	-	2,049	5,479	37.4
Iron	175	-		-	175	1,250	14.0
Price	330	-	25	-	355	2,606	13.6
Rusk	601	-	23	-	624	2,536	24.6
Sawyer	644	-	4	-	1,007	2,793	36.1
Taylor	283	-	10	-	293	2,567	11.4
Washburn	439	-	2	-	441	2,231	19.8

TABLE I (continued)

COUNTY	AFDC & AFDC-U	RCA	GENERAL RELIEF	RNIP	TOTAL PA POPULATION	JTPA ELIGIBLE POPULATION	PERCENT PA
Central WI							
(SDA #10)	3,472	26	148	27	3,673	20,437	18.0
Adams	432	1	14	-	447	2,262	19.8
Marquette	304	-	5	-	309	1,851	16.7
Portage	896	8	28	-	932	6,842	13.6
Waushara	510	1	29	-	540	2,713	19.9
Wood	1,330	16	72	27	1,445	6,769	21.3
West Central WI							
(SDA # 11)	8,455	37	664	141	9,297	47,091	19.7
Barron	1,064	-	64	136	1,264	5,563	22.7
Chippewa	1,477	7	155	-	1,639	6,538	25.1
Clark	677	-	19	5	691	5,744	12.0
Dunn	788	-	46	-	834	5,548	15.0
Eau Claire	2,301	12	330	-	2,643	11,262	23.5
Pepin	149	-	1	-	150	793	18.9
Pierce	456	18	12	-	486	3,488	13.9
Polk	915	-	32	-	947	4,464	21.2
St. Croix	638	-	5	-	643	3,691	17.4
Waukesha-Ozaukee-Washington Consortium							
(SDA #12)	3,915	9	406	-	4,330	17,953	24.1
Ozaukee	426	-	45	-	471	2,760	17.1
Washington	1,235	-		-	1,235	5,158	23.9
Waukesha	2,254	9	361	-	2,624	10,035	26.1
North Central WI							
(SDA #13)	2,900	-	251	403	3,518	14,420	24.4
Forest	399	-	4	120	523	1,993	26.2
Langlade	779	-	62	-	841	2,935	28.7
Lincoln	714	-	72	-	786	2,964	26.5
Oneida	727	-	61	-	788	3,772	20.9
Vilas	281	-	16	283	580	2,756	21.0
Northeastern WI							
(SDA #14)	6,945	22	634	782	8,383	31,079	27.0
Brown	3,581	22	471	165	4,239	16,070	26 4
Florence	141	-	3	-	144	709	20.3
Marinette	1,129	-	90	-	1,219	4,614	26.4
Menominee	509	-		502	1,011	1,060	95.4
Oconto	775	-	27	-	802	3,939	20.4
Shawano	810	-	43	115	968	4,687	20.7
Southwestern WI							
(SDA #15)	2,496	1	121	-	2,618	16,077	16.3
Grant	844	-	38	-	882	6,273	14.1
Green	520	1	18	-	539	2,875	18.7
Iowa	331	-	17	-	348	2,464	14.1
Lafayette	261	-	10	-	271	2,014	13.5
Richland	540	-	38	-	578	2,451	23.6

TABLE I (continued)

COUNTY	AFDC & AFDC-U	RCA	GENERAL RELIEF	RNIP	TOTAL PA POPULATION	JTPA ELIGIBLE POPULATION	PERCENT PA
Western WI (SDA #16)	6,305	34	226	164	6,729	29,832	22.6
Buffalo	297		6		303	2,111	14.4
Crawford	439	1		4	444	2,712	16.4
Jackson	742		47	106	895	2,637	33.9
Juneau	712	2	21	29	764	3,133	24.4
La Crosse	2,116	30	81	2	2,229	10,701	20.8
Monroe	878	1	15	23	917	4,150	22.1
Trempealeau	573		45		618	3,813	16.2
Vernon	548		11		559	3,708	15.1
Lake Michigan (SDA #17)	3,839	23	416		4,278	16,036	26.7
Door	402		21		423	2,296	18.4
Kewaunee	258		1		259	1,597	16.2
Manitowoc	1,445	8	329		1,782	5,832	30.6
Sheboygan	1,734	15	65		1,814	6,311	28.7
Milwaukee County (SDA #18)	40,902	514	13,293		54,709	102,530	53.4
State Total					144,245	462,449	31.2

TABLE II

PUBLIC ASSISTANCE RECIPIENTS ESTIMATES BY SERVICE DELIVERY AREA - 1984

COUNTY/AGENCY LIST	AVERAGE AFDC	1984 RCA AVERAGE	1984 AVERAGE GENERAL RELIEF	1984 RNIP AVG.	TOTAL P.A.	JTPA ELIGIBLE POPULATION	PERCENT P.A.
WINNE-FOND LAKE - SDA #2 - TOTAL	4,596	17	753	0	5,367	18,766	28.6
Fond du Lac	1,679	7	120	-	1,806	6,653	27.1
Green Lake	369	-	7	-	376	1,647	22.8
Winnebago	2,549	10	626	-	3,186	10,466	30.4
SOUTHEASTERN WI - SDA #3 - TOTAL	11,258	1	2,502	0	13,762	30,294	45.4
Kenosha	4,075	-	667	-	4,742	10,644	44.6
Racine	5,903	1	1,748	-	7,652	13,299	57.5
Walworth	1,280	-	87	-	1,367	6,351	21.5
NORTHERN LAKE WINNEBAGO - SDA #4 - TOTAL	3,747	6	228	132	4,114	15,285	26.9
Calumet	370	1	17	-	388	1,599	24.3
Outagamie	2,456	5	187	132	2,781	9,644	28.8
Waupaca	921	-	24	-	945	4,042	23.4
SOUTH CENTRAL WI - SDA #5 - TOTAL	4,209	0	289	17	4,515	18,660	24.2
Columbia	838	-	72	-	910	3,772	24.1
Dodge	1,155	-	53	-	1,208	5,047	23.9
Jefferson	1,168	-	107	-	1,275	5,106	25.0
Sauk	1,048	-	57	17	1,122	4,735	24.0
MARATHON COUNTY - SDA #6 - TOTAL	2,233	1	426	5	2,666	11,103	24.0
ROCK COUNTY - SDA #7 - TOTAL	4,744	11	998	-	5,753	11,841	48.6
DANE COUNTY - SDA #8 - TOTAL	4,258	49	1,609	-	5,917	36,498	16.2
NORTHWEST WI - SDA #9 - TOTAL	6,603	1	186	694	7,484	25,835	29.0
Ashland	590	1	43	145	779	2,388	32.6
Bayfield	601	-	6	127	734	2,279	32.2
Burnett	538	-	8	112	658	2,539	25.9
Douglas	2,126	-	60	-	2,186	5,333	41.0
Iron	176	-	0	-	176	1,197	14.7
Price	388	-	19	-	407	2,437	16.7
Rusk	630	-	32	-	662	2,415	27.4
Sawyer	733	-	1	310	1,044	2,722	38.4
Taylor	327	-	11	-	338	2,410	14.0
Washburn	494	-	6	-	500	2,115	23.6
CENTRAL WI - SDA #10 - TOTAL	3,873	15	148	15	4,051	20,354	19.9
Adams	509	1	10	-	520	2,291	22.7
Marquette	343	-	2	-	345	1,797	19.2
Portage	995	7	22	-	1,024	7,000	14.6
Waushara	535	-	26	-	561	2,634	21.3
Wood	1,491	7	98	15	1,601	6,632	24.1

TABLE II (continued)

COUNTY/AGENCY LIST	AVERAGE AFDC	1984 RCA AVERAGE	1984 AVERAGE GENERAL RELIEF	1984 RNIP AVG.	TOTAL P.A.	JTPA ELIGIBLE POPULATION	PERCENT P.A.
WEST CENTRAL WI - SDA #11 - TOTAL	9,223	26	756	5	10,010	46,287	21.6
Barron	1,157	-	70	-	1,227	5,248	23.4
Chippewa	1,615	3	188	-	1,807	6,292	28.7
Clark	742	-	7	5	754	5,296	14.2
Dunn	819	-	36	-	855	5,621	15.2
Eau Claire	2,438	9	396	-	2,843	11,673	24.4
Pepin	155	-	3	-	158	722	21.9
Pierce	511	12	18	-	542	3,543	15.3
Polk	1,040	-	29	-	1,069	4,238	25.2
St. Croix	746	1	9	-	756	3,654	20.7
WOW CONSORTIUM - SDA #12 - TOTAL	4,383	3	571	0	4,957	20,128	24.6
Ozaukee	503	-	44	-	547	2,876	19.0
Washington	1,415	-	160	-	1,575	5,227	30.1
Waukesha	2,465	3	367	-	2,835	12,025	23.6
NORTH CENTRAL WI - SDA #13 - TOTAL	3,345	6	198	355	3,904	14,142	27.6
Forest	466	-	4	94	564	1,902	29.7
Langlade	815	-	44	-	859	2,782	30.9
Lincoln	742	6	83	-	831	2,877	28.9
Oneida	787	-	53	-	840	3,826	22.0
Vilas	535	-	14	261	810	2,755	29.4
NORTHEASTERN WI - SDA #14 - TOTAL	7,485	11	699	518	8,714	30,549	28.5
Brown	3,735	11	431	-	4,178	16,317	25.6
Florence	171	-	2	-	173	663	26.1
Marinette	1,249	-	95	-	1,344	4,357	30.8
Menominee	537	-	0	426	963	966	99.7
Oconto	881	-	127	-	1,008	3,784	26.6
Shawano	912	-	44	92	1,048	4,462	23.5
SOUTHWESTERN WI - SDA #15 - TOTAL	2,658	0	151	0	2,809	15,525	18.1
Grant	854	-	36	-	890	6,108	14.6
Green	563	-	34	-	597	2,801	21.3
Iowa	372	-	35	-	407	2,383	17.1
Lafayette	294	-	9	-	303	1,918	15.8
Richland	575	-	37	-	612	2,315	26.4
WESTERN WI - SDA #16 - TOTAL	6,662	13	218	105	6,999	32,122	21.8
Buffalo	331	-	3	-	334	2,008	16.6
Crawford	447	-	1	4	452	2,560	17.7
Jackson	735	-	50	71	856	2,492	34.3
Juneau	794	-	11	15	820	2,945	27.8
La Crosse	2,120	13	89	2	2,225	10,977	20.3
Monroe	991	-	21	13	1,025	3,998	25.6
Trempealeau	663	-	34	-	697	3,645	19.1
Vernon	580	-	9	-	589	3,507	16.8

TABLE II (continued)

COUNTY/AGENCY LIST	AVERAGE AFDC	1984 RCA AVERAGE	1984 AVERAGE GENERAL RELIEF	1984 RNIP AVG.	TOTAL P.A.	JTPA ELIGIBLE POPULATION	PERCENT P.A.
LAKE MICHIGAN - SDA #17 - TOTAL	4,115	7	466	0	4,588	15,643	29.3
Door	411	-	28	-	439	2,226	19.7
Kewaunee	255	-	1	-	256	1,515	16.9
Manitowoc	1,576	3	351	-	1,930	5,683	34.0
Sheboygan	1,873	4	86	-	1,963	6,219	31.6
MILWAUKEE COUNTY - SDA #18 - TOTAL	43,768	94	15,331	-	59,194	103,155	57.4
STATE TOTAL	127,053	268	25,529	1,951	154,804	466,187	33.2

Section E. JTPA Eligible Populations - State of Wisconsin

JTPA eligible estimates for the State are provided on the following table for Program Year 1984 and Program Year 1985 together with projections for 1995.*

The data should assist users in planning for changes in the number and makeup of the economically disadvantaged in Wisconsin.

The most dramatic changes may come from the movement of the Baby Boom generation through the population ranks, resulting in a sizable decrease in the Total Youth category by 1995 and a corresponding increase in the Adult 22-55 age category by that year.

An explanation of the procedure used to document the various JTPA eligible groups follows the table.

County data are published in separate reports for each Service Delivery Area.

*Program Year 1984: July 1, 1984, through June 30, 1985.
Program Year 1985: July 1, 1985, through June 30, 1986.
Projections: Calendar Year 1995.

State of Wisconsin

JTPA ELIGIBLE TITLE II*

	Program Year 1984		Program Year 1985		1995 Projected	
	Number	Percent	Number	Percent	Number	Percent
TOTAL	486,286	100.0%	466,187	100.0%	486,169	100.0%
Male	212,912	43.7%	203,344	43.6%	213,013	43.8%
Female	273,374	56.2%	262,843	56.4%	273,156	56.1%
TOTAL YOUTH	104,963	21.5%	107,497	23.1%	75,377	15.5%
Age 14-15	14,884	3.0%	13,892	3.0%	14,050	2.8%
Age 16-21	90,079	18.5%	93,605	20.1%	61,327	12.6%
Male	51,305	10.5%	46,985	10.1%	36,852	7.5%
Female	53,658	11.0%	60,364	12.9%	38,524	7.9%
TOTAL ADULT	381,323	78.4%	358,690	76.9%	410,792	84.4%
Age 22-54	339,033	69.7%	327,379	70.2%	373,278	76.7%
Age 55-69	42,290	8.6%	31,311	6.7%	37,514	7.7%
Male	166,839	34.3%	156,211	33.5%	179,931	37.0%
Female	214,484	44.1%	202,462	43.4%	230,860	47.4%
WHITE, NON-HISPANIC	402,594	82.7%	384,485	82.5%	382,361	78.6%
MINORITY	83,692	17.2%	81,707	17.5%	103,808	21.3%
Black	54,003	11.1%	54,465	11.7%	67,402	13.8%
Hispanic	13,163	2.7%	12,869	2.8%	16,619	3.4%
Amer. Indian, Eskimo	10,516	2.1%	8,150	1.7%	11,848	2.4%
Asian and Other	6,010	1.2%	6,108	1.3%	7,939	1.6%
HANDICAPPED	51,719	10.6%	35,565	7.6%	44,975	9.2%
DISPLACED HOMEMAKERS	66,767	13.7%	65,260	14.0%	69,359	14.2%
SCHOOL DROPOUTS (16-69)	86,508	17.7%	79,195	17.0%	109,028	22.4%
AFDC-WEOP, JTPA ELIGIBLE	41,531	8.5%	65,008	13.9%	41,531	8.5%
TEENAGE PARENTS	22,746	4.6%	19,986	4.3%	17,127	3.5%
OFFENDERS & EX-OFFENDERS	15,139	3.1%	14,242	3.1%	11,219	2.3%
VETERANS	53,654	11.0%	53,611	11.5%	31,994	6.5%
Vietnam Era	15,311	3.1%	15,308	3.3%	15,046	3.0%
REFUGEES	14,879	3.0%	15,144	3.2%	14,879	3.0%

*Totals may not add due to rounding.

PROCEDURES USED TO ESTIMATE THE INCIDENCE OF JTPA TITLE II ELIGIBLE GROUPS

Definitions of the Job Training Partnership Act (JTPA) Title II eligible population, targeted population subgroups, and the factors used to estimate the number and incidence in the JTPA eligible population include the following:

1. TOTAL POPULATION ESTIMATES

   The total number of persons eligible for services under Title II of the JTPA includes all individuals, age 14 through 69, who reside in a household with income less than or equal to the economically disadvantaged benchmark, which was defined by Congress as being either:

   a. Living in a household receiving cash public assistance, or

   b. Living in a household whose total annualized income was less than the official poverty line or 70% of the Bureau of Labor Statistics lower living standard income level for the geographic area in which he/she resided.

   All methodological procedures used to estimate population sizes begin at the county level and are summed to achieve Service Delivery Area (SDA) and State eligible population estimates. County population ratios of individuals by category residing in households with estimated incomes less than or equal to the economically disadvantaged benchmark were applied to county population projections for the current period which were supplied by the Demographic Services Center (DCS) of the Wisconsin Department of Administration. The Constant Proportion Share Method (CPSM) for small area demographic analysis was the methodology used, unless otherwise noted. Income data on the number of persons age 16 through 21 and 22+ residing in households with incomes less than or equal to the economically disadvantaged benchmark was supplied by the national Bureau of Labor Statistics (BLS) and was derived from the 1980 Census.

2. TOTAL YOUTH ESTIMATES

   The total number of JTPA Title II eligible youth, age 14 through 21, is defined as the total number of persons of that age category which reside in households with income less than or equal to the economically disadvantaged benchmark. The youth category was split into two dichotomous age cohorts, 14-15 and 16-21. Different methodologies were used to estimate the number of JTPA Title II eligible persons at the county level in each category.

   The number of economically disadvantaged persons in the 16-21 age category was supplied by BLS. Using the CPSM, the portion of economically disadvantaged youth in the 1980 age cohort was factored against the DCS projections for that age cohort to estimate the incidence in the current population for the 16-21 age cohort for each county.

The BLS did not supply data on the number of economically disadvantaged youth in the 14-15 age cohort. The estimate for this age cohort was derived by applying the portion of the total population in the 1980 Census which was identified as living in households less than or equal to the economically disadvantaged benchmark, and applying this factor against the population projections supplied by DCS for the 14-15 age cohort on the county level.

The assumption used to derive this estimate was that the incidence of being economically disadvantaged for the 14-15 age cohort was the same on the county level as the over-all rate of being economically disadvantaged for each county.

3. TOTAL ADULT ESTIMATES

The total number of JTPA Title II eligible adults, age 22 through 69, is defined as the total number of persons of that age category which reside in households with income less than or equal to the economically disadvantaged benchmark. The adult category was split into two dichotomous age cohorts, 22-54 and 55-69. Different methodologies were used to estimate the number of JTPA Title II eligible persons at the county level in each category.

The number of economically disadvantaged persons in the 22-54 age category was derived by using the CPSM and factoring the rate of economically disadvantaged adults in the total adult population in the 1980 Census on the county level against the county adult population estimates for the 22-54 age cohort. This results in an estimated number of economically disadvantaged adults 22-54 in each county for the current period.

The BLS did not supply data on the number of economically disadvantaged adults in the 55-69 age cohort. The estimate for this age cohort was derived by splitting the age cohort into two dichotomous age cohorts, 55-64 and 65-69 and estimating the eligible population on a county basis for each cohort. The number of economically disadvantaged persons in the 55-64 age category was estimated by using the CPSM and factoring the rate of economically disadvantaged adults in the total adult population in the 1980 Census on the county level against the county adult population estimates as supplied by DCS for the 55-64 age cohort. This results in an estimated number of economically disadvantaged adults 55-64 in each county for the current period. The number of JTPA eligible persons who may be appropriate for JTPA services was estimated by using the CPSM and factoring the number of persons 65-69 in the 1980 Census on a county level who were unemployed and seeking employment against the DCS supplied projection for the 65-69 age cohort for the current period on a county basis. The estimated number of JTPA eligible in the 55-64 and 65-69 age categories was then summed to estimate the number of JTPA Title II eligible individuals in the 55-69 age category on a county level for the current period.

4. AGE COHORTS BY SEX

The population was split into two dichotomous categories by sex, and the number of females was estimated using the CPSM. The male category was estimated by subtracting the estimated number of JTPA Title II eligible females from the total population size for each county.

The BLS did not supply data on the number of economically disadvantaged females in the 1980 Census. The estimates for females was obtained by establishing the number of females in the 1980 Census who resided in households with an income less than or equal to the poverty level. It was then assumed that the rate of poverty will not have a statistically significant difference from the economically disadvantaged rate for the female population in each county. The 1980 female rate of poverty was factored against JTPA Title II eligible estimates for youth and adults for the current period to estimate the number of females eligible for JTPA Title II.

5. RACIAL AND ETHNIC GROUPS

The number of JTPA Title II eligible by race and ethnic origin are the number of individuals of those subpopulations aged 14 through 69 residing in households which were below or at the economically disadvantaged level in each county. Using the CPSM, ratios of the incidence of racial and ethnic subpopulations who resided in households below or at the poverty level in the 1980 Census were derived. The total subpopulation in the 1980 Census was factored with a population projection as supplied by DCS. From the projection, a growth-rate was derived and was applied to the subpopulations. These calculations are based on an assumption that the subpopulation growth-rate will be equal to the growth-rate of the population as a whole. The projected racial and ethnic population is increased proportionately to total population growth from the 1980 Census to the current period, assuming that the rate of poverty will not have a statistically significant difference from the economically disadvantaged rate for the racial and ethnic subpopulations in each county. The 1980 racial and ethnic subpopulation rate of poverty was factored against the racial and ethnic subpopulation projections for the current period to estimate the number of persons in each subpopulation eligible for JTPA Title II.

6. PUBLIC ASSISTANCE RECIPIENTS

The definition of a public assistance recipient includes all persons who are low-income and who have received a cash transfer payment of public assistance. The Wisconsin Department of Health and Social Services (DH&SS) was not able to provide an unduplicated count of persons who received public assistance payments during the previous year, which was necessary in order to estimate valid projections. Instead, we are able to obtain an unduplicated number of persons age 14 through 69 receiving one of four discrete categories of public assistance during each month of the previous year. The discrete categories of public assistance includes: Aid to Families with Dependent Children (AFDC), General

Relief (GA), Relief to Needy Indian Persons (RNIP), and Refugee Cash Assistance (RCA). To obtain a monthly population average, we obtained a mean of twelve monthly unduplicated recipient counts which was reported to DH&SS and took this average as a proportion of the JTPA Title II eligible population. All public assistance recipients are assumed to be economically disadvantaged.

7. AFDC-WEOP, JTPA ELIGIBLE

The total number of individuals who would be eligible for services in the Aid to Families with Dependent Children - Wisconsin Economic Opportunities Program (AFDC-WEOP) is defined as the number of AFDC recipients who would be enrolled in the work-incentive WEOP program, if that program were available in each county of the state. The Department of Health and Social Services (DH&SS) in conjunction with the Department of Industry, Labor and Human Relations (DILHR) currently operates AFDC-WEOP programs in 27 counties. In order to estimate the number that would be enrolled in an AFDC-WEOP program if it were available in all counties, an average ratio was obtained of the number of AFDC-WEOP participants to AFDC recipients currently enrolled in 26 of the AFDC-WEOP counties (excluding Milwaukee) and, using the CPSM, the ratio was projected into counties not participating in AFDC-WEOP and factored against AFDC recipients in each county. For those counties in which AFDC-WEOP programs are operating, the actual number of AFDC-WEOP participants in the most recent program year was established. Once the number of AFDC-WEOP eligible was estimated for each county, the county estimates were summed to the SDA level and was then taken as a proportion of the total JTPA Title II eligible.

8. EDUCATIONAL ATTAINMENT STATUS (DROPOUTS)

Educational attainment status refers to individuals, age 16 through 69, who have left a formal educational institution without obtaining a high school degree and have not obtained a General Education Degree (GED).

To establish the estimated number of dropouts, the ratio of 16-19 year olds enrolled in school in relation to the total 16-19 year old population was derived from the "Employment and Training Report of the President, 1982". This ratio was applied to county population 16-19 years of age estimates to estimate an in-school population figure. The enrolled ratio is a national figure, but precise county ratios are not necessary since applying a relatively small county dropout percent will narrow variation between the national and county in-school ratio. The 1980 dropout rate for each county, supplied by the Department of Public Instruction, was then applied to the in-school 16-19 age cohort to establish an estimate of the 16-19 age cohort dropouts.

The 16-19 age dropout rate for each county was then divided by the state average dropout rate for 16-19 year olds to produce a relative dropout rate among the counties. The relative dropout rate was then factored against the state average dropout rate for 25-64 year olds to derive a 25-64 age cohort county dropout rate. In turn, the 25-64 age cohort

county rate was factored against the 25-64 age county estimated population to produce an estimate of 25-64 age cohort dropouts. The 25-64 dropout rate was derived from the 1980 Census and is simply the number of persons 25+ age who completed up to 3 years of high school divided by the total 25-64 age population.

The teen and adult dropout estimates were then summed, and the ratio of the 16-64 estimated economically disadvantaged population to total population was then applied, which established a county estimate of total economically disadvantaged dropouts. Individual county estimates were then summed to establish SDA JTPA Title II eligible dropout estimates.

9. HANDICAPPED

Handicapped JTPA Title II eligible individuals are defined as those people with a handicapping disability who live in households with income at or below the economically disadvantaged income level.

The estimated/total population of handicapped persons by county was supplied by the Department of Health and Social Services (DH&SS), which was estimated through the use of the Ridge-Worral Formula which factors national regression weights for age, sex, race and household income into a disability estimate. It is assumed for establishing the JTPA eligible handicapped estimates that the disabled population suffers the same rate of being economically disadvantaged as the county population as a whole.

10. OFFENDERS AND EX-OFFENDERS

The subpopulation Offenders and Ex-offenders is defined as the number of individuals age 16 through 69 who have been committed to the supervision of the Wisconsin Department of Health and Social Services, Division of Corrections, and are either inmates of penal institutions or are serving on probation or parole. Annual population figures are supplied by the DH&SS for each county and are summed to the SDA level. Inmates of penal institutions were recorded in their county of permanent residence, rather than in the county where the institution is located. It is assumed that all members of the offenders and ex-offenders subpopulation are economically disadvantaged.

11. VETERANS AND VIETNAM ERA VETERANS

Veterans and Vietnam Era Veterans who are eligible for JTPA Title II are individuals with an income less than or at the economically disadvantaged level. The number of Veterans and Vietnam Era Veterans was supplied by the Veteran's Administration for each county. In order to estimate the portion of the population which would be JTPA Title II eligible, it is necessary to assume that veterans have the same incidence of being economically disadvantaged as the population as a whole. Utilizing the CPSM, the rate of economically disadvantaged in the population, as identified in the 1980 census, was factored against the veterans population figures. County estimates were summed to the SDA level.

12. REFUGEES

A refugee eligible for JTPA Title II services is defined as an economically disadvantaged person who has been granted refugee status by the U.S. Immigration and Nationalization Service (INS) based upon their reason for leaving their country of origin.

The known refugee population is obtained from the DH&SS Refugee Resettlement Office on a county basis. It is assumed that all refugees, 16 through 69 years of age, are at or below the economically disadvantaged level. County refugee figures are summed to the SDA level.

13. DISPLACED HOMEMAKERS

A displaced homemaker eligible for JTPA Title II services is defined as an individual living at or below the economically disadvantaged level who:

a. Has not worked in the labor force for one or more years but has, during those years, worked in the home providing unpaid services for family members; and

b. Either:

   i. Has been dependent on public assistance or the income of another family member, but is no longer supported by that income, or

   ii. is receiving public assistance because of dependent children in the home; and

c. Is unemployed and is experiencing difficulty in obtaining or upgrading employment.

Neither the Census nor BLS provided data on displaced homemakers; therefore, the methodology used to estimate the incidence of displaced homemakers eligible for JTPA Title II services uses the ratio of female heads of households, with related children, and living at or below the poverty level to total householders with related children as obtained from File 3A of the 1980 Census for the State. This ratio was factored against the state ratio of family householders to total population to yield a ratio of female householders with children at the poverty level to the total population. It was assumed that the incidence of female heads of households who are economically disadvantaged is equal to the incidence of female heads of households living in poverty. The ratio of female household heads living in poverty was then factored against the projected economically disadvantaged population estimates for each county. County estimates were then summed to achieve SDA estimates.

14. TEENAGE PARENTS

Teenage parents eligible for JTPA Title II services are defined as individuals under 20 years of age with children who live in households whose total income is below or at the economically disadvantaged level. The estimating procedure begins with Table 84 of the 1980 Census Summary Tape File 4. Table 84 contains, for each county, the number of family units at various income levels cross-tabulated with the age of the household head. The total number of families in each county with less than $15,000 in income and with household head between 15 and 24 years of age was obtained. Since data is not available which relates the age of parents with economically disadvantaged income levels, we are required to use an income level of $15,000 or less as the family income benchmark. The teenage headed portion of the total cohort was assumed to be significantly smaller than the 20-24 headed portion. The percent of the total for each single-year category was increased proportionately with age and with the amount of the increase held constant. This procedure is known as the Constant Cumulative Rate Growth Method (CCRGM), which results in more weight being given to the older age categories. Teenage headed families, using the CCRGM, accounted for 27 percent of the total households headed by a person between 15 and 24 years of age and whose total household income is less than $15,000. In order to estimate the number of teenage parents, the estimated number of teenage households was multiplied by two to include both parents.

Section F. The Insured Unemployed -- Weakened Safety Net?

Nationally there is some concern because the insured unemployed make up a smaller proportion of the total unemployed than in the past. There is some evidence that tightening eligibility requirements may have decreased the number of unemployed who are eligible for unemployment compensation. Stricter work search requirements and administration may have discouraged others from collecting.

Such a reduction in the safety net would increase the ripple effect of layoffs. A smaller proportion collecting unemployment compensation means that there would be a greater loss of buying power. That means more layoffs in nearby stores and businesses.

In Wisconsin, and nationally, employment covered by unemployment compensation laws has gradually increased. Covered employment is about 85 percent of total employment.

In good years, new entrants and voluntary job changers make up a large share of the total unemployed. They are not insured. During heavy layoffs, as in 1980, the insured unemployed normally become a larger share of the total unemployed.

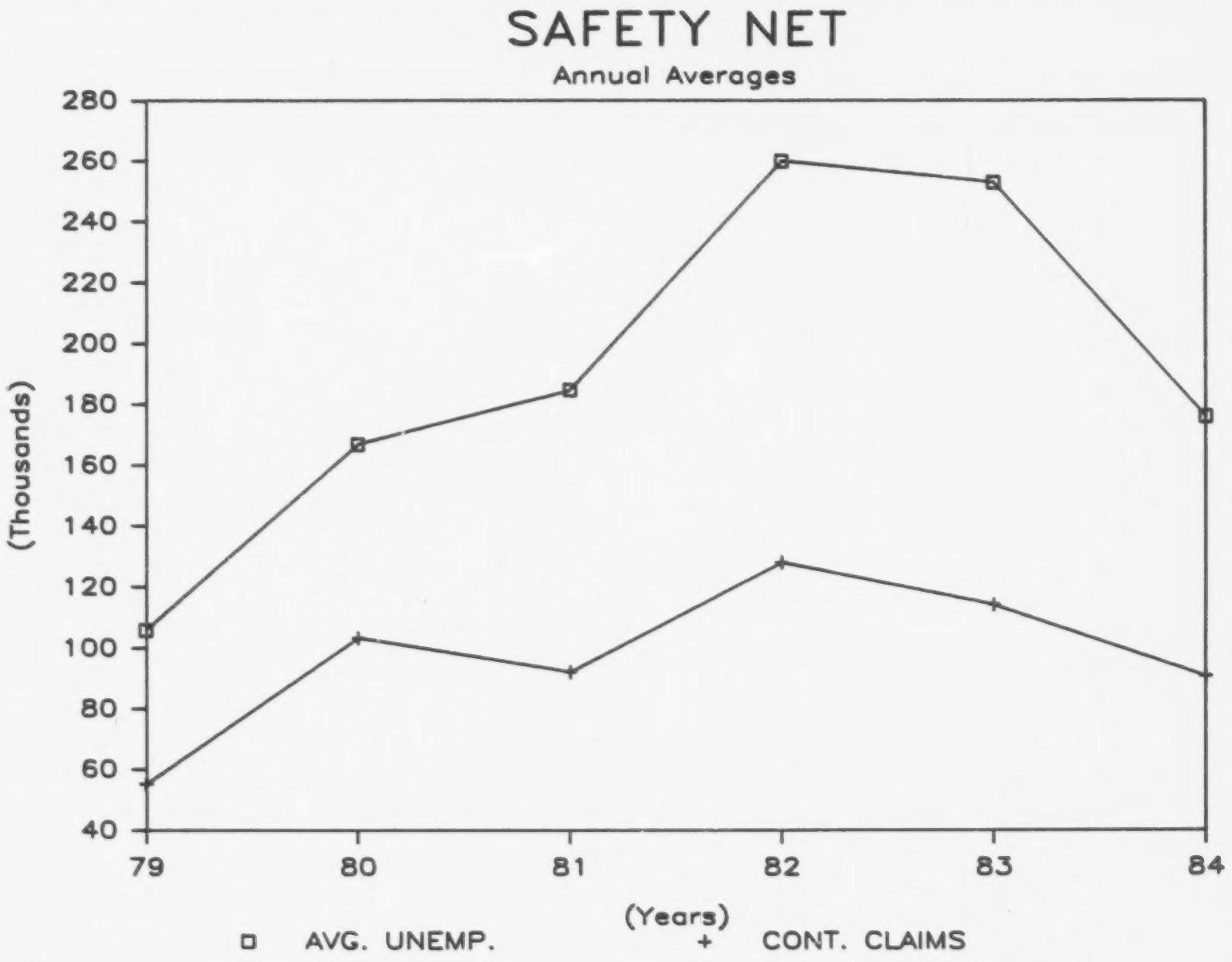
With more laid off in 1981, 1982 and 1983 it would be expected that insured unemployed would remain a larger share of total unemployed. The number of unemployed who exhausted their benefits, and possibly tighter administration, caused the insured unemployed to become a smaller share of the total unemployed. The safety net appears to have become smaller in those years.

In 1984, insured unemployed became a larger share of total unemployed. Because of this, we cannot conclude that the unemployment compensation safety net has been weakened. However, until the Unemployment Compensation Reserve Fund balance is out of debt there will be reason for concern that a weakened safety net will not provide as much protection against ripple effects.

Year	Laus Employ.	U.C. Covered Employ.	U.C. Covered % of Employed
1975	1952000	1599873	82.0%
1976	2028000	1652492	81.5%
1977	2073000	1727834	83.3%
1978	2147000	1835920	85.5%
1979	2226000	1906945	85.7%
1980	2172000	1883577	86.7%
1981	2185000	1865197	85.6%
1982	2180000	1807075	82.9%
1983	2172000	1803797	83.0%
1984	2218000*	1891672*	85.3%

*preliminary

Year	Average Unemployed	Average Cont. Claims	% Cont. Claims of Unemployed
1979	106000	55300	52.2%
1980	167000	103461	62.0%
1981	185000	92219	49.9%
1982	260000	128246	49.3%
1983	253000	114271	45.2%
1984	176000	90734	51.6%


SAFETY NET
Annual Averages
280
260
240
220
200
180
160
140
120
100
80
60
40
(Thousands)
79
80
81
82
83
84
(Years)
AVG. UNEMP.
CONT. CLAIMS

Section G. Profile of the Dislocated Worker in Wisconsin

Between January 1979 and January 1984 an estimated 133,000 people 20 years or over who had been on their jobs three or more years were dislocated because of plant closings, employers going out-of-business or moving, slack work, or the abolishment of their position or shifts in Wisconsin. The number dislocated was equivalent to 5.6 percent of the January 1984 labor force. Among other states, Kentucky matched Wisconsin in the percentage (5.6) of workers displaced. Nine states had higher percentages: Indiana and Alabama - 5.9; Missouri - 6.2; Mississippi - 6.4; Illinois - 6.7; Pennsylvania - 6.8; Michigan - 7.0; Iowa - 7.5; and West Virginia - 9.1.

An estimated 28,000 dislocated workers were unemployed in Wisconsin in January 1984, or 1.2 percent of the labor force. These estimates are based upon a sample by the Bureau of Labor Statistics with a broad 90 percent confidence interval of between 13,000 and 43,000, or between 0.6 percent and 1.8 percent of the labor force. West Virginia - 3.0, Indiana - 2.8, Illinois - 2.8, and Iowa - 2.2 had significantly higher unemployed dislocated worker rates. Wisconsin ranked 16th in unemployed dislocated worker rates but the statistical variation is large.

Based upon a preliminary study of Job Service applicants, potentially eligible dislocated workers and those enrolled in JTPA Title III Dislocated Workers programs tend to include more men and more persons over age 35 than the average job seeker. This is as expected, because the industries and occupations that are declining are largely male-dominated and employ older, experienced workers. The education and ethnic group of dislocated workers is similar to the distribution of all Job Service applicants. A higher percentage of enrolled dislocated workers are minorities than the percentage of potentially eligible dislocated workers who are minorities. A higher proportion of dislocated workers are veterans than found for all applicants. These findings agree with studies of characteristics of unemployment compensation claimants which show that claimants filing 13 weeks or more have much the same characteristics as claimants filing less than 13 weeks except that those filing 13 weeks or more include a smaller proportion who are under age 25 and a smaller proportion who are women.

DISTRIBUTION OF APPLICANTS AVAILABLE AND APPLICANTS
IDENTIFIED AS DISLOCATED - WISCONSIN
July 1984 thru February 1985

		DISLOCATED	
	Applicants Available	Potentially Eligible	Enrolled
Total	417,166	8,333	2,698
Female	43.4%	37.0%	30.4%
Age			
under 16	1.3%	0.1%	0.0%
16-21	23.4%	6.5%	2.3%
22-34	45.7%	44.6%	49.0%
35-44	16.0%	22.2%	26.2%
45-54	8.2%	14.3%	15.5%
55-69	5.1%	12.0%	6.9%
70+	0.2%	0.4%	0.7%
Education			
0- 7	2.2%	3.5%	1.6%
8-11	22.6%	22.8%	18.6%
12	46.7%	52.0%	53.0%
13-15	20.0%	16.4%	21.0%
16+	8.5%	5.2%	5.9%
Race-Ethnic			
White	82.2%	84.6%	77.8%
Minority	14.1%	14.8%	21.5%
Black	10.0%	8.7%	15.3%
Hispanic	2.1%	3.7%	5.2%
Indian	1.0%	0.6%	0.6%
Asian	1.0%	1.8%	0.4%
Handicapped	3.4%	5.1%	3.5%
WEOP	9.9%	17.8%	9.1%
JTPA			
Potential	2.8%	7.0%	7.3%
Enrolled	1.0%	2.7%	7.9%
Public Assistance	4.9%	3.6%	5.3%
Veterans	13.1%	17.1%	22.4%
Vietnam	5.8%	7.7%	9.9%
Refugees	0.9%	1.8%	0.2%

This analysis is preliminary because most Job Service offices did not try to identify all of the potentially eligible dislocated workers. It is not likely, however, that identifying more of the applicants who are potentially eligible will significantly alter these characteristics.

Job Service applicants identified as potentially eligible or enrolled in dislocated worker programs were found in 209 three-digit Standard Occupational Classifications. The list includes production managers, accountants, engineers, drafting, precision machine set-up and a host of other occupations requiring education and skill. In some cases, obsolete education, or an occupation reached through experience without fully qualifying education, may make it necessary for skilled people to be retrained even to obtain work in their skill.

Over 70 percent of the applicants identified as potentially eligible or enrolled dislocated workers were in 30 occupations. Factory assemblers and material handlers head this list, as might be expected. It is surprising to find large numbers in the growing food and beverage service occupations.

THE TOP THIRTY OCCUPATIONS OF APPLICANTS
IDENTIFIED AS DISLOCATED WORKERS - WISCONSIN
March 29, 1985

	Potentially Eligible	Enrolled
Assemblers	743	139
Material Movers, Hand	628	96
Miscellaneous Manual Occupations	482	95
Metal and Plastics Machine Operators	437	136
Food and Beverage Service	376	67
Cleaning Occupations	369	55
Welders and Solderers	283	103
Motor Vehicle Operators	281	62
Sales Occupations, Other	261	80
Material Moving Equipment Operator	230	81
General Office Occupations	195	74
Material and Scheduling Clerks	177	76
Machine Operator, Assorted Material	171	36
Miscellaneous Mechanics, Repair	164	67
Hand Working Occupations	161	65
Secretaries and Typists	159	60
Precision Metal Work	151	105
Vehicle Mechanics	149	29
Financial Processing	136	45
Health Services	123	23
Other Construction Trades	123	23
Supervisors, Production	110	37
Metal and Plastics Set-Up	108	87
Construction Laborers	104	11
Textile Machine Operators	89	80
Salesperson, Shoe	83	21
Metal Work Set-Up	78	71
Manager, Service Organizations	72	14
Information Clerk	71	11
Supervisor, Sales, Retail	70	20
TOTAL	6,448	1,869
	73.5%	71.7%

There is always a lot of stirring in the labor market as sales pick up or decline and businesses start up or fail. Today, with automation and increased competition, new plants are built in a new location, and older plants are closed. New processes are installed that require fewer workers. One firm purchases another and closes the headquarters office of the firm that was purchased.

At this time, we have almost no data on the causes and duration of dislocation. A pilot Permanent Mass Layoff and Plant Closing project will begin to gather some of this information in Wisconsin early in 1986. Mass layoffs involving 50 or more new unemployment compensation claims in over a three-week period will be identified. Employers will be telephoned to determine the cause and potential duration of the layoff. Claimants who are dislocated will be tracked to determine the duration of dislocation.

Section H. Profile of Plant Closings and Layoffs in Wisconsin

Wisconsin has legislation requiring employers to report their intentions prior to closing their firms.

DILHR has received 19 official reports of plant closings from March 1984 through March 1985. One of these involved sale of an establishment with over 2,500 employees which might cause some dislocation of managerial and office staff, but might leave the balance of the work force unaffected. About 2,800 employes might be dislocated in the remaining 18 firms. These numbers are smaller than what we expect to find when the Permanent Mass Layoff and Plant Closing project is operational.

The plant closing requirement, however, may make it more difficult to get accurate information on plant closings in the Permanent Mass Layoff and Plant Closing project.

As an example, one firm reported that it had indefinitely discontinued production and that it was unlikely that it would be able to begin production again, so it would probably close after another 60 days. Does this mean that it has actually closed but cannot say so yet because it has to give the State notice?

The primary industries that report closings were in meat packing, cheese making, mobile home construction, construction machinery manufacturing, and automotive equipment manufacturing.

There is no direct data describing the geographic distribution of dislocated workers for there were too few reports of plant closings to develop meaningful geographic distribution data. We can approximate the distribution by using the distribution of U.C. claimants filing 13 weeks or more and of U.C. exhaustees (persons who have exhausted their unemployment compensation benefits) as a proxy for dislocated workers.

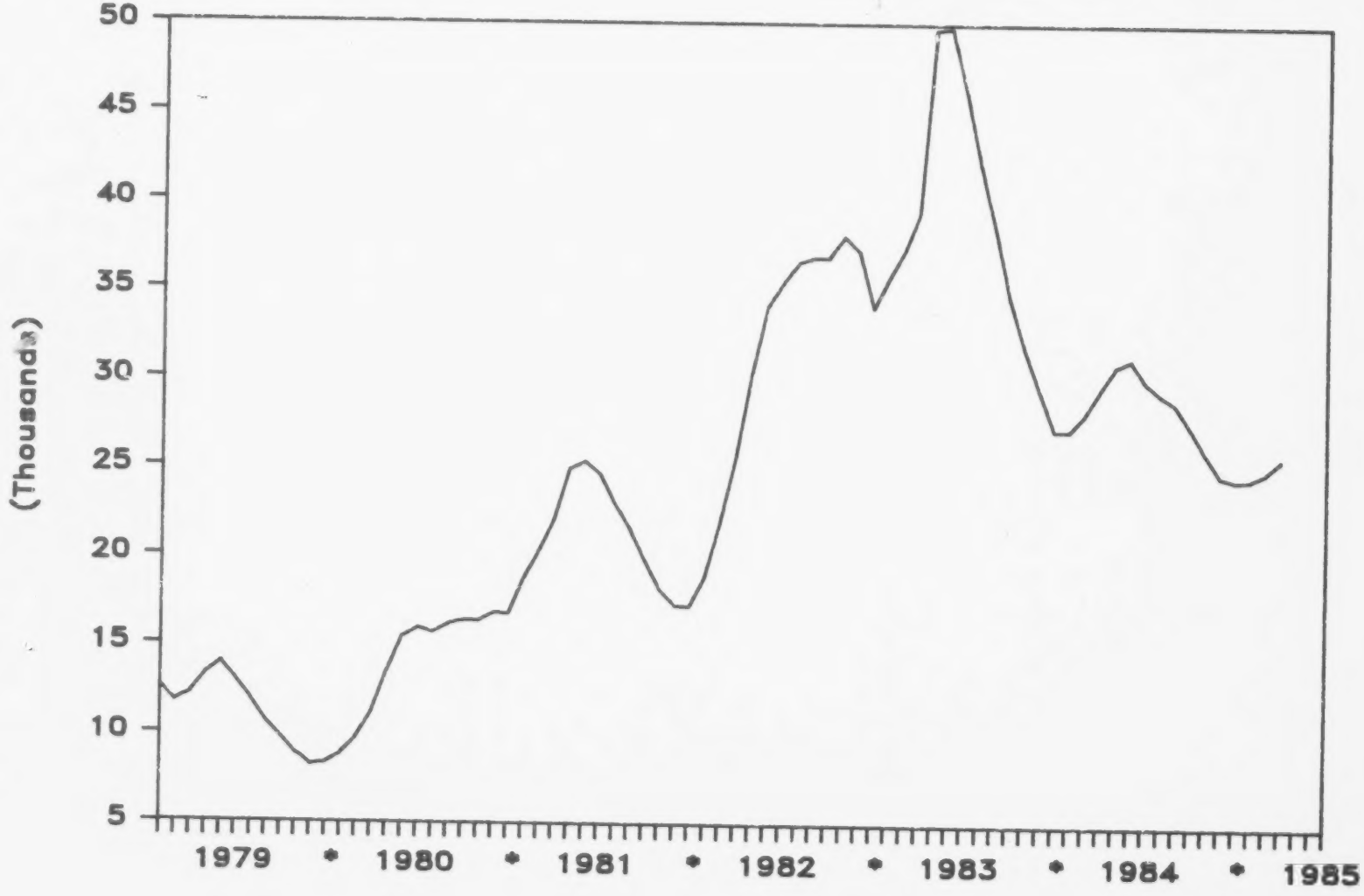
Two improved methods have been proposed. One is for Job Service to identify all applicants who are potentially eligible as dislocated workers. This would provide the best possible characteristics information, but, because it would be subject to differences in individual office operations, it might not prove satisfactory. The second method would be to identify unemployment compensation claimants filing 13 weeks or more who last worked in a two-digit industry with declining employment in the country. This would identify fewer than the number of eligible dislocated workers, but would provide an objective distribution of those who were identified. This second method would not provide as much information on the individual claimants' characteristics.

There is no time series of data about dislocated workers or plant closings. The best information we can provide is information about U.C. exhaustees.

These U.C. exhaustees show a somewhat delayed effect of the recession. This probably also makes sense in terms of dislocated workers because firms would be apt to be able to survive shorter periods of slack business. In November 1979, there were an estimated 8,212 U.C. exhaustees, about one-third

the November 1984 estimate of 24,772. The March 1985 estimate of 25,762 U.C. exhaustees is more than double the March 1979 number. The number of U.C. exhaustees is a function both of the number of workers displaced and of their prospects for other work. It is reasonable to project that this number will remain at least two to three times the pre-recession rate for the next five years.

Wisconsin UC Exhaustees



PART III - INDUSTRY EMPLOYMENT AND ECONOMIC TRENDS PROJECTIONS

Section A. Nonfarm Wage And Salary Employment

The Nonfarm Wage and Salary employment has recovered by 135,100 jobs since the low point of the recession in December 1982. This is an increase of 7.3 percent from December 1982 to December 1984.

All of the major employing categories gained from 1983-1984 with Manufacturing, Trade, Services, and Finance, Insurance and Real Estate having the most significant increases.

MANUFACTURING

Manufacturing increased by 7 percent with 484,100 employment in 1983 to 517,800 employment in 1984. Durable goods had a 8.8 percent increase and nondurable goods a 4 percent increase for this time period.

The most significant industries which increased for durable goods were furniture and fixtures at 16 percent, primary metal industry 13 percent, nonelectrical machinery 10 percent, transportation equipment 8 percent and electrical machinery 7 percent. These industry groups make up 69 percent of the durable goods employment.

Stone, clay and glass, another area of the durable goods, decreased 5 percent. In Wisconsin the majority of the companies in this category are in ready mix concrete and concrete products except block and brick. The companies would be affected by the construction industry which in this past year had a slight increase in employment.

Although nondurable goods had a 4 percent increase in employment from 1983 to 1984 several of the industries in this category showed a greater increase than 4 percent. Those industries are rubber and misc. plastics 16 percent, textile mill products 10 percent, printing and publishing 8 percent and chemicals and allied products at 6 percent. Leather and leather products, however, decreased 3.5 percent.

As the cotton gin ended slavery in the 19th century, it is said computers and robots will end drudgery in the 20th century. Manufacturing is becoming a part of the computer/robot age. Robots currently are on the assembly line for spray painting, welding, alignment and assembly of parts.

For example, General Motors has a new plant opening soon in another state. The production line will include some 2,000 programmable devices, including robots, vision inspection systems and automatically guided vehicles for moving parts.

The production workers will have about 10 weeks training each and the skilled workers will each receive 60 weeks of training.

Change in production techniques and increased use of automated machinery will have the effect of reducing production workers' jobs for a given amount of production and of changing occupational content. There will be an increase in machine repairers, however.

Manufacturing employment decreased each year from 1979 to 1983 and started to rise again from 1983 to 1984. Currently, however, monthly data on the number of workers and hours worked is below year-ago levels.

In 1979, Manufacturing industries had 591,300 persons employed, and in 1984 had 517,800 employed. The current seasonally adjusted employment level for April is 514,800. We still need over 73,500 to return to the 1979 level which had the highest employment before the start of the recession. This does not take into account the normal growth from year to year if the economy had been stable.

Nationwide, a drop in payroll employment among manufacturers in April 1985 occurred in the electrical and electronic equipment industries. Employment in these industries has been growing very rapidly throughout most of the recovery period but now has dropped back to the level of last summer.

The Wisconsin Strategic Development Committee report which was released April 19, 1985 stated, "There are many industries in Wisconsin, including manufacturing industries, that are very healthy". Several major weaknesses, though, are "weak management in some companies, relatively high labor costs, personal taxes and a negative regulatory climate."

TRADE

Trade employment increased by 20,500 from 1983 to 1984 in Wisconsin, making a 4.7 percent gain. Retail trade increased from 337,300 in 1983 to 353,900 in 1984 and wholesale trade increased from 95,900 to 99,900. Trade's peak employment was in 1979. It had a downward trend until 1983, then started to rise again in 1984.

Continued population growth nationwide means more consumers to provide with goods and services. Children under 13 will increase as the large number of people born in the 1950's have children of their own.

Nationwide it is figured that the largest number of new jobs in the Trade sector will be eating and drinking establishments. With more wives in the labor force, and many young working singles, the dependency on fast food services increases. Some national leading restaurant chains are stressing nutrition and catering to two-income families. The Baby Boomers are maturing, both as full-time workers and as consumers.

The U.S. Dept. of Labor, Bureau of Labor Statistics 1984 publication of Occupational Projections and Training Data states that retail firms which are expected to have large increases in jobs (besides eating and drinking places) are department stores, grocery stores and new car dealerships. In wholesale trade, the largest increases will be in machinery, motor vehicles, and electrical goods.

Wisconsin is following the national trend of increase in Trade industry employment.

SERVICE

The Service industry has had a steady growth since 1979. Wisconsin had 351,900 employed in services in 1979 and 403,900 employed in 1984. Service is the 3rd largest industry in Wisconsin, following Manufacturing and Trade.

The Service industry is made up of many diversified services for the consumer from legal assistance, health care, accounting services, hotels, beauty and barber shops, to automotive repair shops, to list a few. Professional services are one of the strongest growth areas.

Rising incomes and living standards result in a greater demand for health care, entertainment, business and financial services.

With the increasing growth in the number of older people there will be a great demand for health care. A recent Census Bureau report showed that the 85 and over age group increased by 19.4 percent nationwide between 1980-1984. This trend will continue in the future. There will be a need for registered nurses, nurse aides and administrators for health care. Many of these occupations will be in nursing homes and health care clinics rather than in hospitals. The level of service will determine the amount of additional employment generated. The willingness and ability to support a given level of service will not be reached as automatically as in the past. Cost restraints will limit the actual level of services that occurs.

Nationwide, service producing industries are projected to account for about 75 percent of all new jobs between 1982 and 1995, according to the Occupational Projections and Training Data cited above.

FINANCE, INSURANCE AND REAL ESTATE (FIRE)

Finance, Insurance and Real Estate has grown every year since 1979. Wisconsin had a 4 percent increase in employment from 1983 to 1984.

This industry has grown to meet the many banking and financial needs of our population. Consumers, especially the Baby Boomers, have borrowed to buy homes, furniture and cars.

There is a future need for increased employment in banks, savings and loan associations, real estate firms and security brokerages. Automated tellers and the computerization of banking and stock transactions will prevent the employment from growing as fast as output.

There is also a trend toward interstate banking. The effect on employment may depend on the extent to which interstate banking is permitted and/or encouraged by state legislatures, particularly among Wisconsin's neighbors in the midwest.

TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES

The Transportation, Communication and Public Utilities increased by 2 percent from 1983 to 1984. In 1983 Wisconsin had 88,100 employed and in 1984 there were 89,700 employed in this industry.

As the population grows, more needs are foreseen by new households and new industries. There will be increased demand for electric power, gas utilities, and water and sanitary services.

There is a rising demand for new telecommunications service particularly due to the greater use of computer systems. Companies, for example, desire hookups between the home base and branch offices.

Fiber optics is the newest technology in telecommunications. Wisconsin has already seen the commercial application of this remarkable communications link in limited areas. Additional installations of fiber-optics cable and digital microwave transmission systems are scheduled for 1985 and 1986, improving both intrastate and interstate voice and data transmission. These innovations will improve productivity at all employment levels and will change the nature of jobs for installers and technicians, in particular.

Deregulation, escalating price wars, railroad piggy-backing, import volume and extent of recovery in manufacture of finished goods are the important factors to consider when it comes to forecasting growth in trucking -- the major component of the transportation industry.

CONSTRUCTION

Construction has been on a downward trend from its 1979 employment peak of 80,500 to 58,300 in 1984. There was a 1 percent increase in Wisconsin employment from 1983 to 1984, the first yearly increase since 1979. The 1984 construction employment is 72 percent of the 1979 employment.

Construction should show a slow upward trend as residential, commercial and industrial construction and maintenance demands increase. A continued growth in use of prefabricated materials will limit the number of workers at construction sites.

The ease of obtaining loans for home or commercial building and the amount of depreciation allowances are factors that affect the construction industry. Changes in consumer income and interest rates will also have an effect on Wisconsin's construction industry.

Technology development in construction methods, equipment and materials (shift to modular building in manufacturing) will limit employment growth and raise the productivity of workers.

At the national level, construction employment is expected to increase 48 percent from 1982 to 1995.

MINING

Mining employment decreased 5 percent from 1983 to 1984. Mining has been on a downward trend since 1979. The major type of mining in Wisconsin is sand and gravel quarrying. With the increased demand in road construction and housing there may be a slight growth in mining employment or, at least, it may stay at its present level.

GOVERNMENT

Government is the fourth highest industry for employment in Wisconsin. There was a slight increase in government employment of 0.4 percent from 1983 to 1984. There was a 0.5 percent increase in both state and local governments, while the federal government decreased almost 1-1/2 percent.

Employment will continue to be affected by budgetary constraints and changing priorities at all levels of government.

WISCONSIN LABOR FORCE ANNUAL AVERAGE EMPLOYMENT IN THOUSANDS

	1979	1980	1981	1982	1983	1984	83-4 CHG	83-84 %CH
CIVILIAN LABOR FORCE	2331	2340	2370	2439	2426	2394	-32	-1.31904
UNEMPLOYMENT	105	167	185	260	253	176	-77	-30.4348
% OF LABOR FORCE	4.5	7.2	7.8	10.7	10.4	7.3	-3.1	-29.8077
EMPLOYMENT	2226	2172	2185	2180	2172	2218	46	2.117864
ALL OTHER NONFARM (1) (2)	173.1	167.7	165.5	171.4	176.8	179	2.2	1.244344
FARM (2)	113.1	110	107	104.1	101.2	98.5	-2.7	-2.66798
NONFARM WAGE & SALARY	1960.2	1938.1	1923.2	1866.8	1864.6	1941.1	76.5	4.102757
MANUFACTURING	591.3	558	543.5	498.2	484.1	517.8	33.7	6.961372
DURABLE GOODS	393.7	364.4	351.5	310.8	295.7	321.7	26	8.792695
24 LUMBER & WOOD PROD	23.3	20.7	20.4	18.3	20.2	21.5	1.3	6.435644
25 FURNITURE & FIXTURES	10.5	9.6	9.5	8.7	8.9	10.3	1.4	15.73034
32 STONE CLAY & GLASS	10	9.1	8.7	7.9	7.8	7.4	-.4	-5.12821
33 PRIMARY METAL IND	29.6	26.1	25.4	20.1	17.6	19.9	2.3	13.06818
34 FAB. METAL PRODUCTS	60.9	58.4	57.2	50.7	48.6	50.9	2.3	4.732510
35 NON-ELECTRICAL MACH	134.5	125.7	118.4	103.9	92.7	102.2	9.5	10.24811
36 ELECTRICAL MACHINERY	58.2	56.8	55.5	50	49.1	52.6	3.5	7.128310
37 TRANSPORTATION EQUIP	42.6	34.7	33.4	29.9	33.3	36.1	2.8	8.408408
38 PROF SCI & CONTROL INS	12.4	12.4	12.1	11	10.5	10.7	.2	1.904762
39 MISC MFG INDUSTRIES	11.6	10.9	10.8	10.1	9.6	10.1	.5	5.208333
NONDURABLE GOODS	197.6	193.6	192	187.4	188.4	196.2	7.8	4.140127
20 FOOD & KINDRED PROD	64.6	64.9	64.2	63	61.7	62.7	1	1.620746
22 TEXTILE MILL PROD	5.4	4.7	3.9	4	4.2	4.6	.4	9.523810

Wisconsin Labor Force Annual Average Employment In Thousands

	1979	1980	1981	1982	1983	1984	83-4 CHG	83-84 %CH
23 APPAREL & OTHER FIN PR	6.6	6.5	6.4	6.4	6.4	6.5	.1	1.5625
26 PAPER & ALLIED	48.9	47.8	47.8	46.7	46.7	47.2	.5	1.070664
27 PRINTING PUB & ALLIED	32.4	32.4	32.3	32.5	33.6	36.2	2.6	7.738095
28 CHEM & ALLIED PROD	9.8	9.7	9.9	9.4	9.3	9.9	.6	6.451613
30 RUBBER & MISC PLASTICS	19.4	17.6	17.6	16.5	17.7	20.5	2.8	15.81921
31 LEATHER & LEATHER PTOD	10.2	9.4	9.4	8.6	8.4	8.1	-.3	-3.57143
OTHER NONDURABLE GOODS	.4	.4	.4	.4	.4	.4	0	0
10-14 MINING	2.6	2.6	2.4	1.9	1.9	1.8	-.1	-5.26316
15-17 CONSTRUCTION	80.5	70.1	64.8	56.9	57.7	58.3	.6	1.039861
40-49 TRANS COMM & PUB UTIL	92.2	92.1	92.3	89.4	88.1	89.7	1.6	1.816118
50-59 TRADE	441.2	436.8	432.4	428.9	433.3	453.8	20.5	4.731133
50-51 WHOLESALE TRADE	96.4	96.7	98.1	96.6	95.9	99.9	4	4.171011
52-59 RETAIL TRADE	344.8	340.1	334.3	332.3	337.3	353.9	16.6	4.921435
60-67 FIN INS & REAL ESTATE	90.3	93.3	95	95.8	98.6	102.2	3.6	3.651116
70-89 SERVICE & MISC	351.9	364.2	374.9	381.5	388.6	403.9	15.3	3.937210
90-94 GOVERNMENT	310.1	321.1	318	314.1	312.4	313.6	1.2	.3841229
91 FEDERAL GOVERNMENT		28.4	27.7	27.7	27.1	26.7	-.4	-1.47601
92 STATE GOVERNMENT		79.5	79.3	78.1	79.5	79.9	.4	.5031447
93 LOCAL GOVERNMENT		213.3	210.9	208.3	205.9	206.9	1	.4856727

(1) INCLUDES SELF-EMPLOYED, UNPAID FAMILY & DOMESTIC WORKERS.

(2) THE BUREAU OF LABOR STATISTICS OF THE U.S. DEPARTMENT OF LABOR DOES NOT CONSIDER THESE FIGURES VALID FOR PUBLICATION.

• TOTALS MAY NOT ADD DUE TO ROUNDING

• ANNUAL AVERAGE DATA ON 1984 BENCHMARK

Section B. Industry Projections to 1990 and 1995

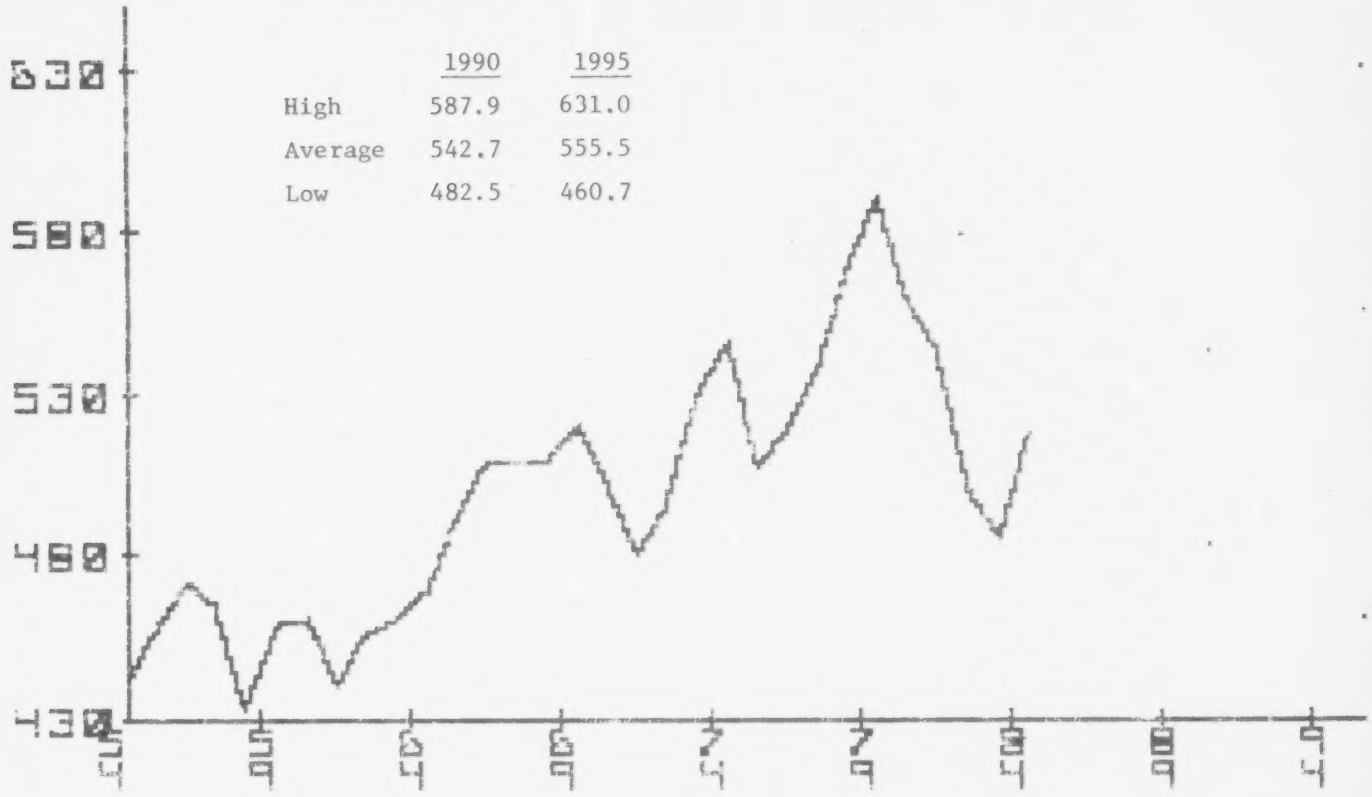
What are the major factors that will have the most influence on the Wisconsin economy during the coming decade?

A number of DILHR labor market analysts put together a list of factors following a discussion of the outlook for the state's industries. The following includes factors that were cited most often and that appeared to influence most industries:

1. Consumer disposable income
2. Tax deductions, both federal and state/federal tax simplication?
3. Automation of manufacturing plants/machining centers/CAD-CAM
4. Support for highway maintenance
5. Residential and industrial building and maintenance
6. Population changes/number of wage earners per family
7. Health care services/funding/elderly population
8. Increase in leisure activities/tourism
9. Small business growth/part-time employment
10. Communications technology/competition
11. Foreign competition/third world countries
12. World dollar exchange/level of exports

A panel consisting of the DILHR analysts and other government and business persons then developed forecasts which are incorporated into the industry projections to 1990 and 1995. On the following pages, the arithmetic mean of three highest forecasts, arithmetic mean of all forecasts, and the arithmetic mean of the three lowest forecasts are given for each industry.

WIS MANUFACTURING EM



	1990	1995
High	587.9	631.0
Average	542.7	555.5
Low	482.5	460.7

1954	441.9	1961	439.0	1968	510.3	1975	507.0	1982	498.2
1955	458.0	1962	455.9	1969	520.9	1976	519.4	1983	484.1
1956	471.4	1963	461.4	1970	500.9	1977	540.4	1984	517.8
1957	463.8	1964	469.6	1971	479.6	1978	569.7		
1958	431.8	1965	491.9	1972	495.4	1979	591.3		
1959	459.8	1966	508.6	1973	531.7	1980	558.0		
1960	460.4	1967	508.7	1974	546.1	1981	543.5		

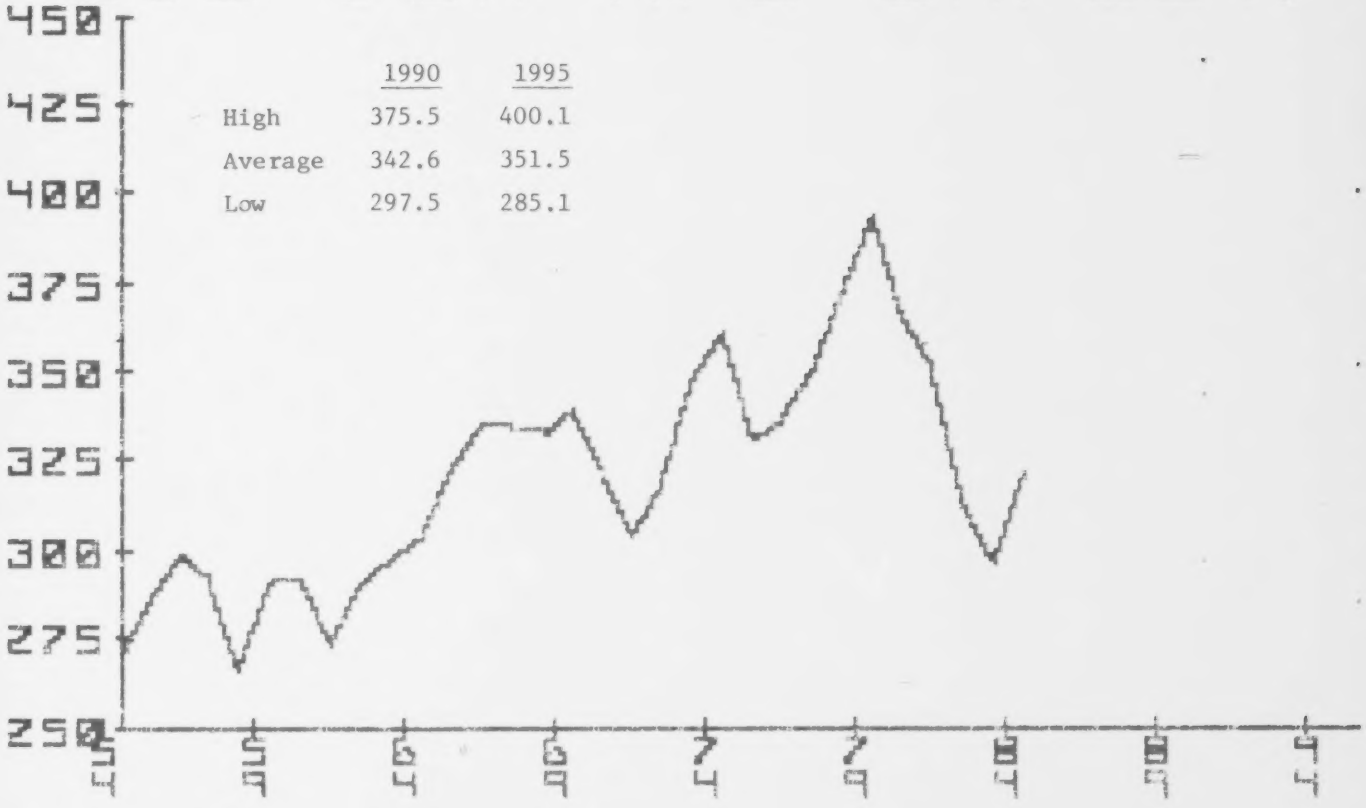
The Wisconsin multi-faceted manufacturing industry is made up of many sectors. In the durable goods sector the four areas with the highest employment are nonelectrical machinery, electrical machinery, fabricated metal products and transportation equipment. In the nondurable goods sector food and kindred products and printing, publishing and allied dominates.

Although there has been a decline in manufacturing employment since 1979 it is still Wisconsin's largest employing sector. There was slight growth in employment from 484,100 in 1983 to 517,800 in 1984 (7 percent). The durable goods industries increased by 9 percent and nondurable goods industries increased by 4 percent during this time period.

Many factors affect the manufacturing sector, such as world competition, automation of manufacturing plants, consumer income, tax deductions both federal and state, water supply, transportation and government regulations.

Half of the panelists who forecasted for 1990 had manufacturing employment between 542,000 and 561,000. In 1995 half of the panelists (7) forecasted the employment would be from 563,000 to 572,000.

WIS DUR MFG EMPLOY



	1990	1995
High	375.5	400.1
Average	342.6	351.5
Low	297.5	285.1

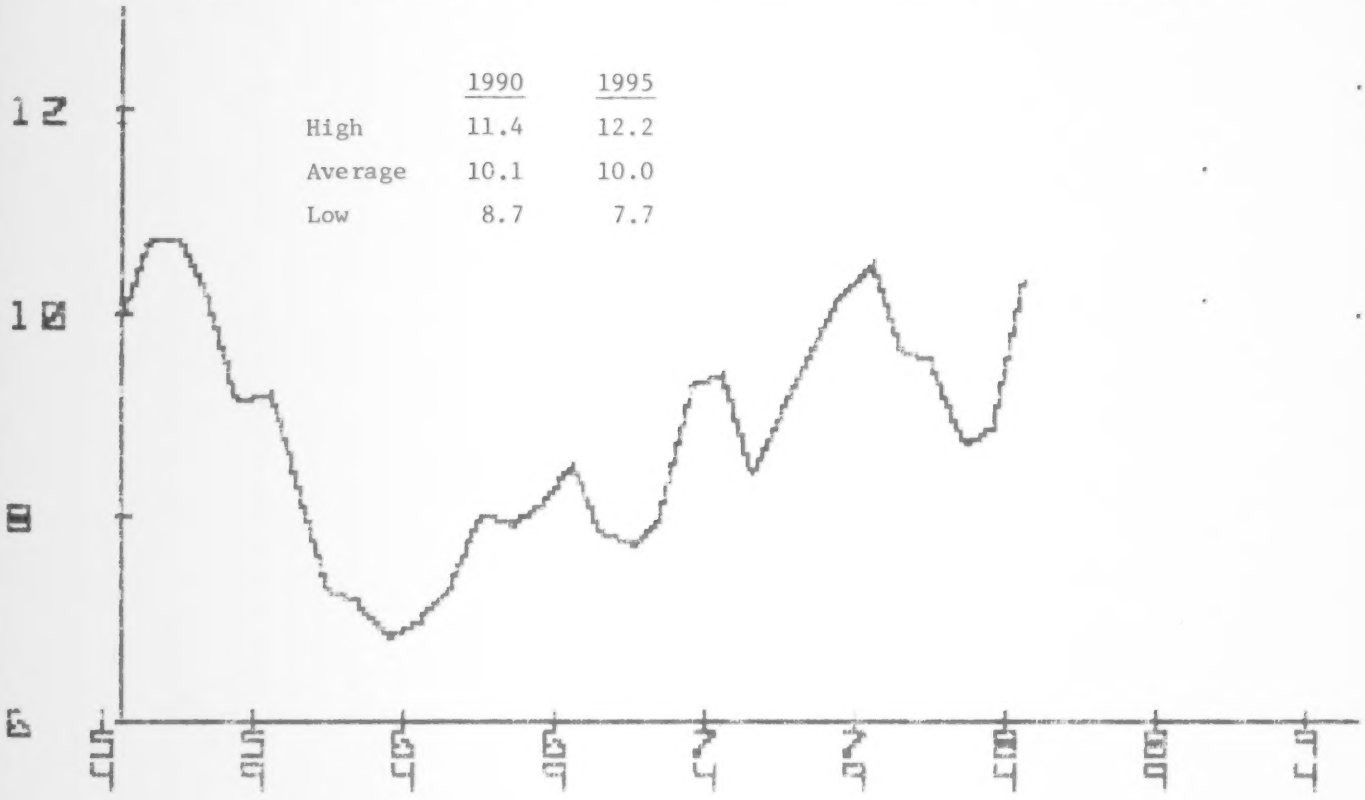
1954	270.4	1961	271.9	1968	332.2	1975	330.3	1982	310.8
1955	286.5	1962	289.7	1969	339.1	1976	336.6	1983	295.7
1956	298.3	1963	296.9	1970	321.5	1977	351.1	1984	321.7
1957	292.0	1964	303.3	1971	304.2	1978	373.7		
1958	265.0	1965	322.5	1972	317.9	1979	393.7		
1959	291.2	1966	334.9	1973	348.4	1980	364.4		
1960	291.7	1967	333.6	1974	360.7	1981	351.5		

Durable Goods accounts for three-fifths of total manufacturing employment.

In 1983, employment in Durable Goods reached a low not seen since 1962. However, 1984 employment shows evidence of modest recovery from the previous year's recessionary level.

The average forecast points to continued modest growth by 1995. Only the high forecast points to an employment figure that would exceed any previous year's employment.

WIS FURNITURE/FIXT



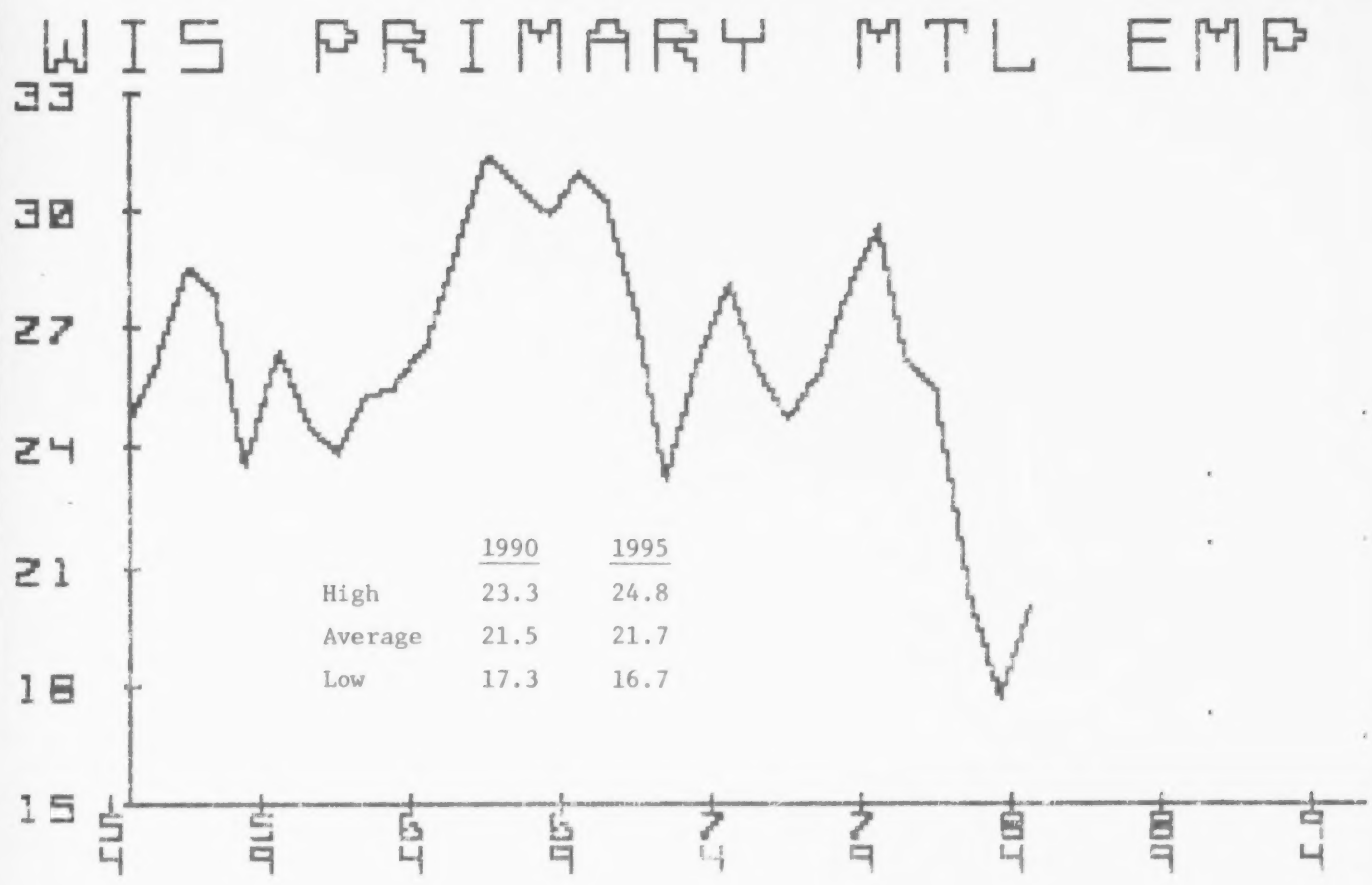
1954	9.9	1961	7.2	1968	8.1	1975	8.4	1982	8.7
1955	10.7	1962	7.1	1969	8.5	1976	9.0	1983	8.9
1956	10.7	1963	6.8	1970	7.8	1977	9.7	1984	10.3
1957	10.1	1964	7.0	1971	7.7	1978	10.2		
1958	9.1	1965	7.3	1972	8.0	1979	10.5		
1959	9.2	1966	8.0	1973	9.3	1980	9.6		
1960	8.2	1967	7.9	1974	9.4	1981	9.5		

Furniture and fixtures increased by 16 percent in employment between 1983 and 1984, which ranked this industry number one in employment increases in the durable goods section of manufacturing.

The average employment forecasts for 1990 and 1995 were 10,100 and 10,000. For 1990 eight of the thirteen panelists predicted employment of over 10,000 and for 1995 six of the thirteen panelists predicted over 10,000, with employment of 13,000 being the highest.

Much of the future for this industry depends on housing and consumer demands. There could be growth in small shops and craft shops.

Labor disputes and difficulty competing with imports could have an adverse effect on this industry.



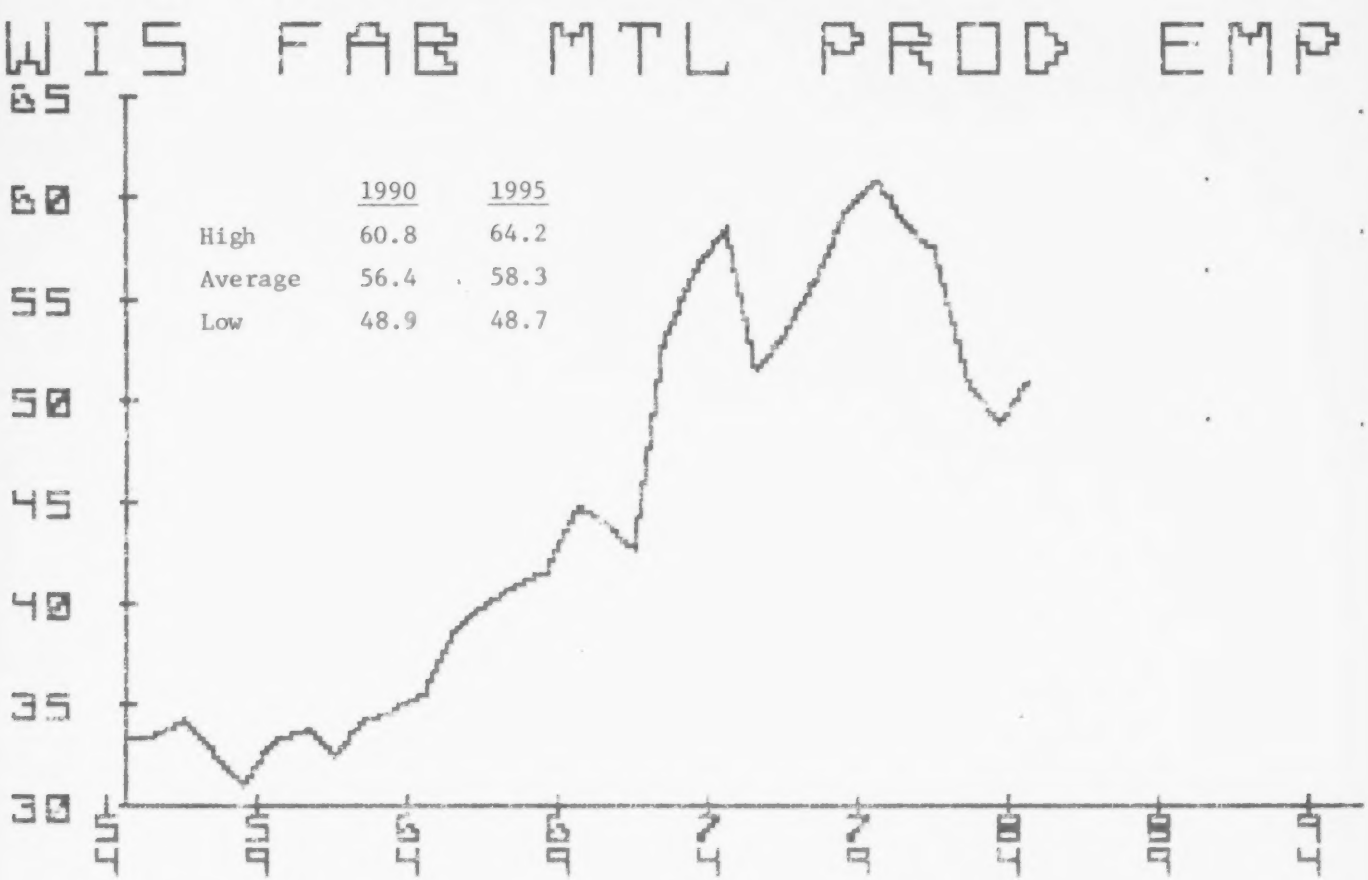
1954	24.6	1961	23.7	1968	29.9	1975	26.0	1982	20.1
1955	26.2	1962	25.4	1969	31.0	1976	24.7	1983	17.6
1956	28.5	1963	25.6	1970	30.1	1977	25.9	1984	19.9
1957	27.8	1964	26.7	1971	27.4	1978	28.0		
1958	23.5	1965	29.0	1972	23.2	1979	29.6		
1959	26.4	1966	31.3	1973	26.3	1980	26.1		
1960	24.6	1967	30.6	1974	28.2	1981	25.4		

The primary metal industry increased its employment by 13 percent from 1983 to 1984. It ranked second in the durable goods sector in its employment increase from 1983 to 1984. (Furniture and fixtures was first at a 16 percent increase in employment from 1983 to 1984.)

This industry rises or falls with the fluctuating production of auto, construction and farm equipment. The economic factors which affect these companies also affect employment in the primary metal industry.

Some of the factors which will affect the future growth of employment in this industry are companies which make their own castings, the auto industry, automation and a shift to fewer and larger foundries.

Nine of the thirteen panelists predicted between 22,000 and 23,600 for employment in 1990 and seven made the same projection for 1995.



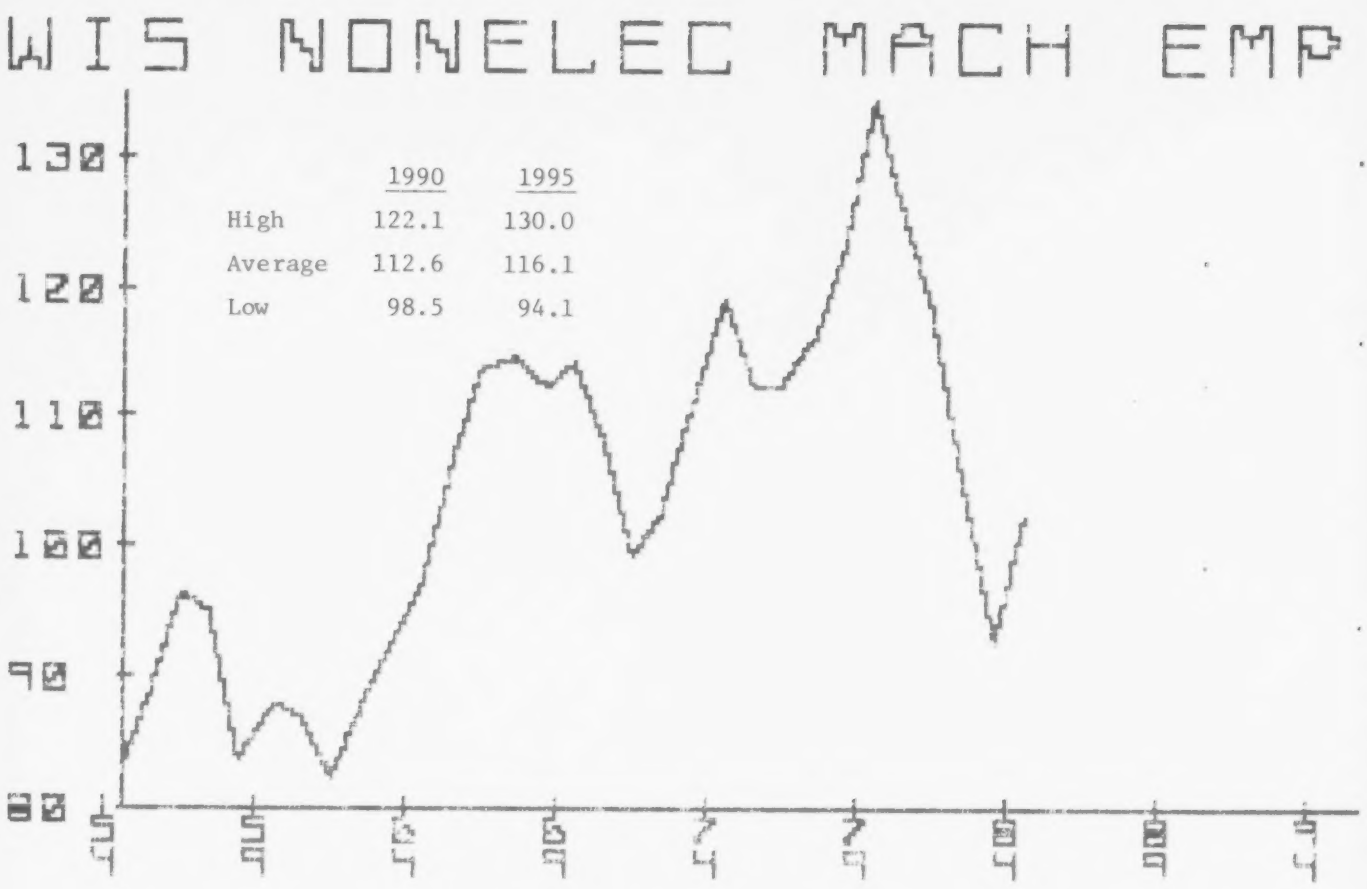
1954	33.2	1961	32.3	1968	41.5	1975	51.2	1982	50.7
1955	33.5	1962	34.1	1969	44.6	1976	53.2	1983	48.6
1956	34.2	1963	34.6	1970	43.8	1977	56.0	1984	50.9
1957	32.6	1964	35.7	1971	42.4	1978	59.4		
1958	30.8	1965	38.7	1972	52.7	1979	60.9		
1959	33.1	1966	40.0	1973	56.6	1980	58.4		
1960	33.8	1967	40.8	1974	58.4	1981	57.2		

The metal products in this group vary from fabrication of ferrous and nonferrous metal to general hardware and a variety of metal and wire products not elsewhere classified.

The average employment for this industry increased from 48,600 in 1983 to 50,900 in 1984 (5 percent). The panelists predicted an increase of 11 percent in 1990 from 1984 and 4 percent increase in 1995 from 1990.

Plastics taking the place of metal forgings, newer automation plants in areas of the nation where electricity is cheaper and the link with the auto industry are contributing factors to the growth or decline of this industry.

Much depends on general sale of durable metal goods; as machinery goes, so goes this industry.

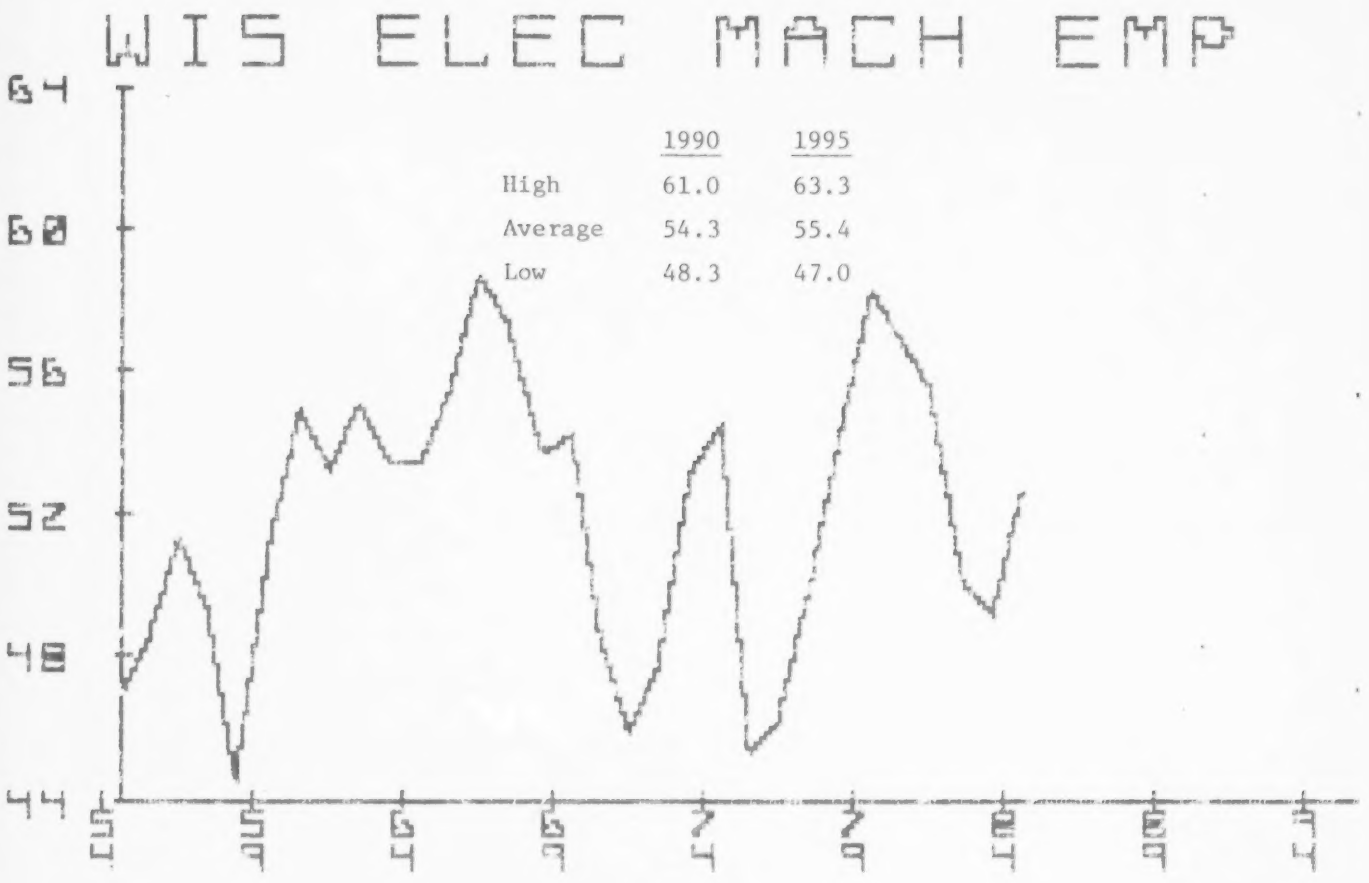


1954	82.7	1961	82.0	1968	112.5	1975	112.4	1982	103.9
1955	88.7	1962	87.4	1969	114.3	1976	112.9	1983	92.7
1956	96.4	1963	92.0	1970	108.2	1977	116.5	1984	102.2
1957	94.8	1964	97.5	1971	99.2	1978	123.4		
1958	83.6	1965	106.2	1972	102.8	1979	134.5		
1959	87.7	1966	113.7	1973	111.5	1980	125.7		
1960	86.5	1967	114.7	1974	119.1	1981	118.4		

Nonelectrical machinery is the largest manufacturing group in Wisconsin. This industry grew from 92,700 in 1983 to 102,200 in 1984, a 10.2 percent increase. It is at the same levels of employment as in 1972 but still a long way from the high point of 134,500 in 1979.

The majority of the panelists expect the employment to grow in the next ten years. Three of the panelists thought there was to be a decrease in employment from 1990 to 1995.

Automating the machinery center, tough world competition, national security interest and CAD/CAM all play a role when it comes to the future outlook of this industry. The industry may grow faster in dollar volume than in employment.

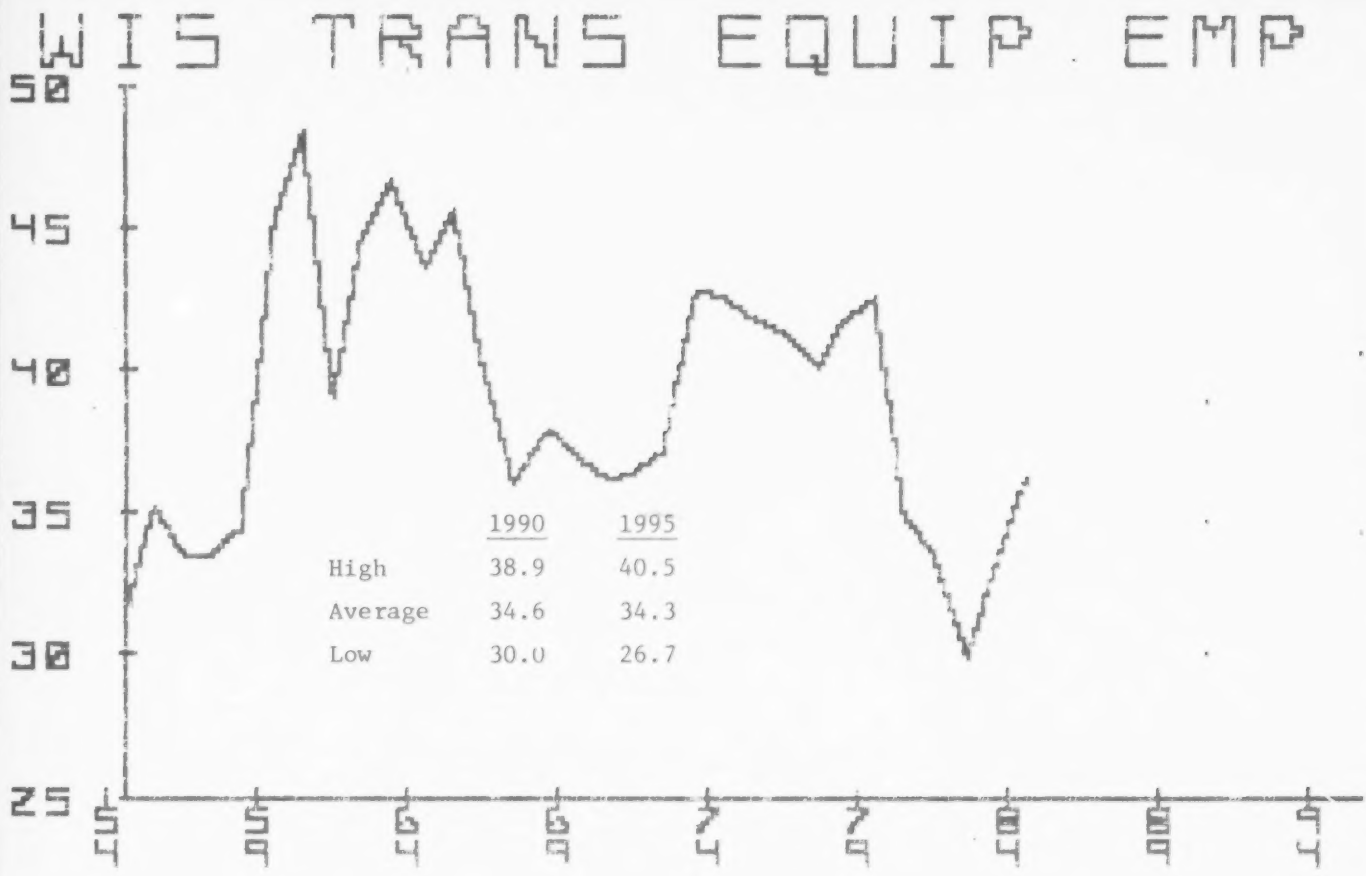


1954	46.9	1961	53.2	1968	53.7	1975	45.3	1982	50.0
1955	48.6	1962	55.1	1969	54.3	1976	46.3	1983	49.1
1956	51.3	1963	53.4	1970	48.6	1977	50.3	1984	52.6
1957	49.3	1964	53.5	1971	45.8	1978	54.6		
1958	44.5	1965	55.5	1972	47.7	1979	58.2		
1959	51.3	1966	58.6	1973	53.3	1980	56.8		
1960	54.9	1967	57.2	1974	54.6	1981	55.5		

This industry has been on a decline since 1979, but between 1983 and 1984 it increased employment by 7 percent. It is the second highest employing industry in the durable goods sector for Wisconsin, having overtaken fabricated metals in 1983 and 1984.

The largest employment groups for this industry are industrial controls and motor generators. These industries depend largely on orders from the auto and housing sectors.

Some of the factors that will affect this industry in the next five to ten years are world dollar exchange, takeover of firms and the domination of a few companies. The industry should improve if it does not lose its share of the national market. The forecast of the average employment figures for 1990 and 1995 show that there will be an increase of 1,700 from 1984 to 1990 and an increase of 1,100 from 1990 to 1995.

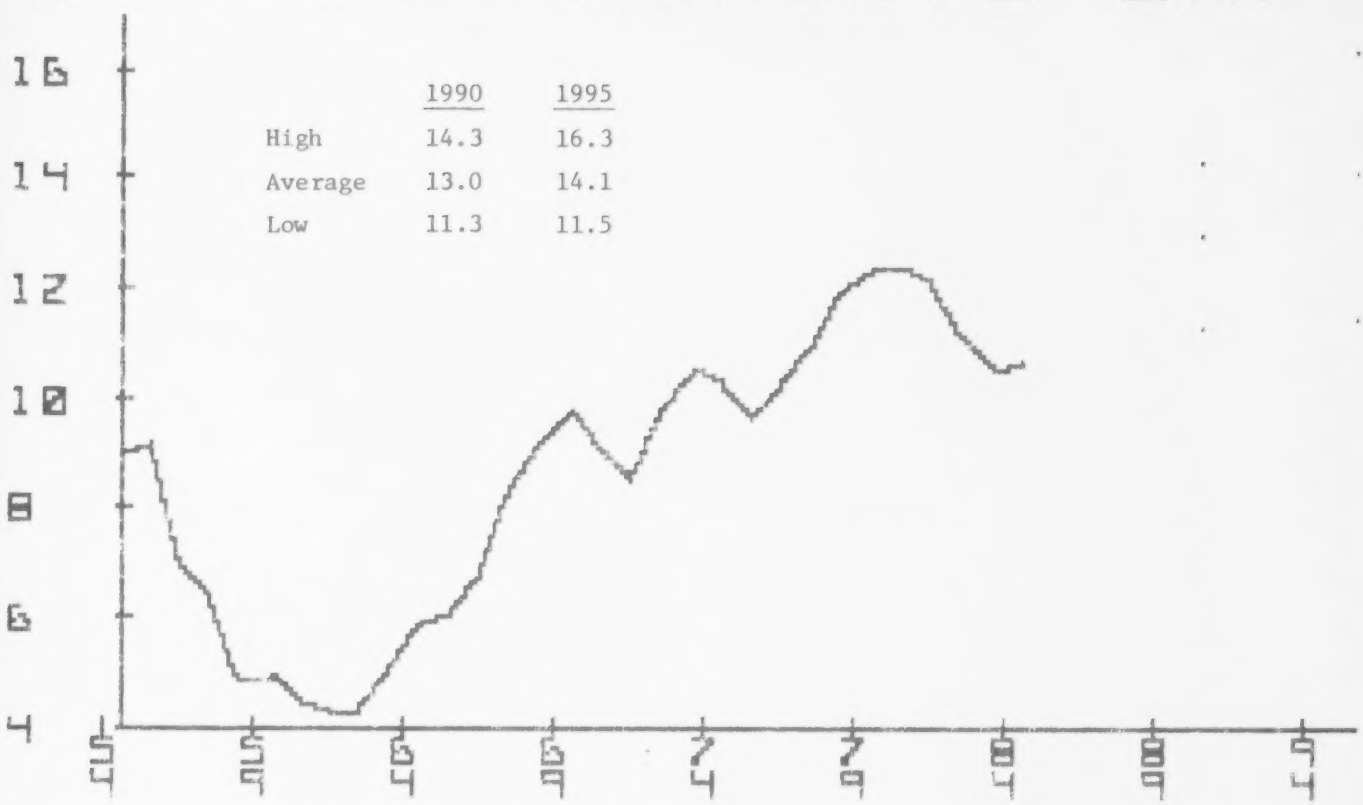


1954	31.2	1961	39.0	1968	37.8	1975	41.7	1982	29.9
1955	35.1	1962	44.7	1969	36.9	1976	41.2	1983	33.3
1956	33.5	1963	46.7	1970	36.2	1977	40.0	1984	36.1
1957	33.6	1964	43.6	1971	36.5	1978	41.9		
1958	34.5	1965	45.6	1972	37.1	1979	42.6		
1959	45.2	1966	40.0	1973	42.8	1980	34.7		
1960	48.4	1967	35.9	1974	42.5	1981	33.4		

The transportation equipment industry for Wisconsin increased 8.4 percent in employment from 1983 to 1984. This is the fourth largest employing industry in the durable goods sector for Wisconsin.

Some of the factors that affect the future growth of this industry are robots and automation, new plants with more capacity, defense contracts, ship engines, motorcycle and bicycle production, and new inventions. Other factors to consider are high wages, closing of old plants and the phasing out of truck manufacturing plants.

The forecast by the panelists for average employment in this industry is 34,600 in 1990 and 34,300 in 1995. This is down approximately 2,000 from 1984. Of the thirteen panelists, seven forecasted below 36,000 for 1990 and nine forecasted below 36,000 for 1995.

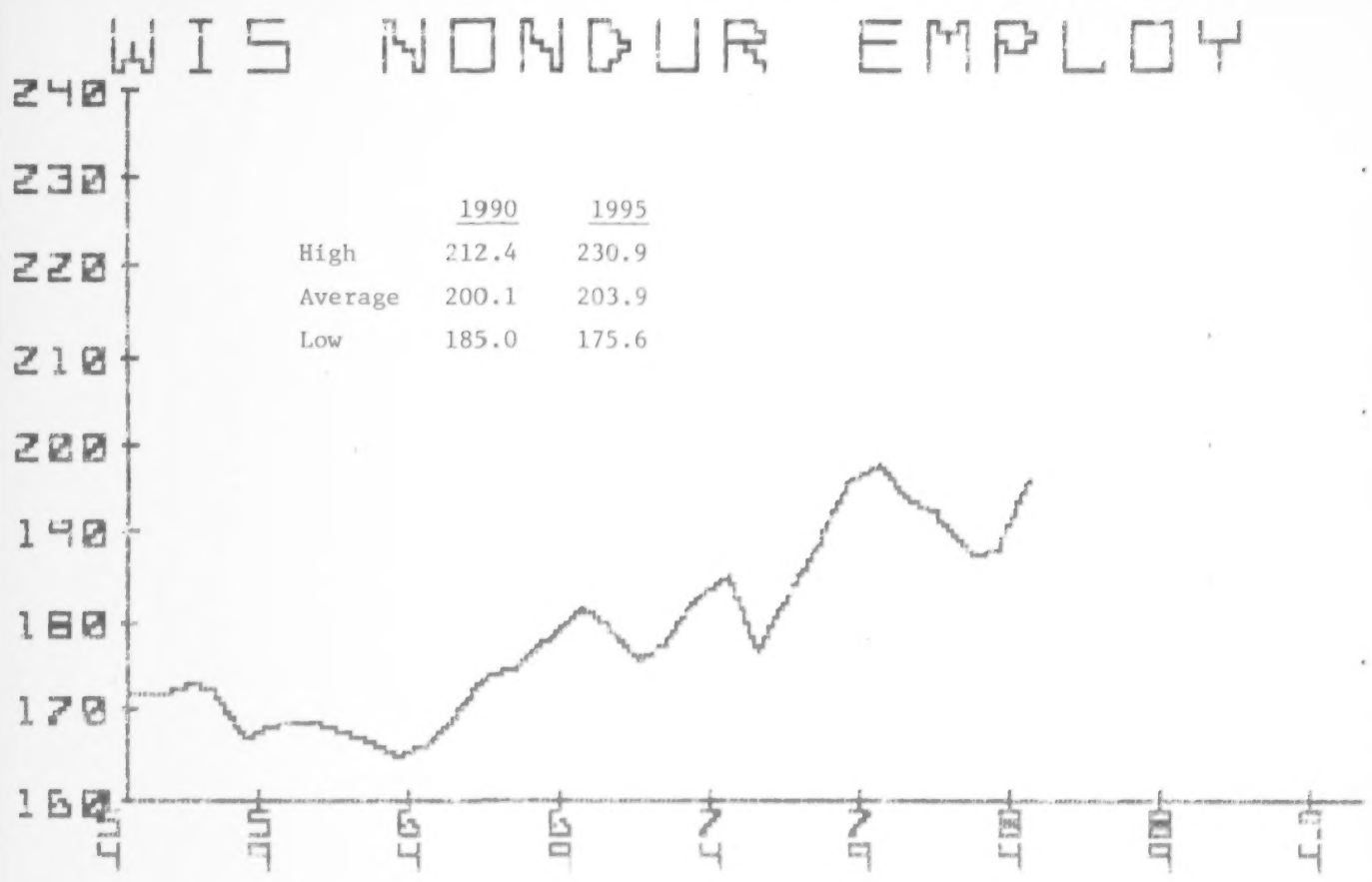


1954	9.0	1961	4.2	1968	9.3	1975	9.6	1982	11.0
1955	9.2	1962	4.3	1969	9.8	1976	10.2	1983	10.5
1956	7.0	1963	5.0	1970	9.0	1977	11.0	1984	10.7
1957	6.3	1964	5.9	1971	8.5	1978	12.0		
1958	4.8	1965	6.1	1972	9.7	1979	12.4		
1959	4.9	1966	6.8	1973	10.5	1980	12.4		
1960	4.4	1967	8.3	1974	10.2	1981	12.1		

This is not one of the larger manufacturing industries in Wisconsin, but it is one of the fastest growing sectors. This industry supplies establishments with engineering, laboratory and scientific instruments, fluid meters and automatic controls.

A strong dollar plays an important role in this highly competitive world wide industry. Sophisticated plant automation and new instrumentation are other factors in the growth of this industry.

The majority of the panelists felt the industry would grow strongly between 1984 and 1990 and 1995.

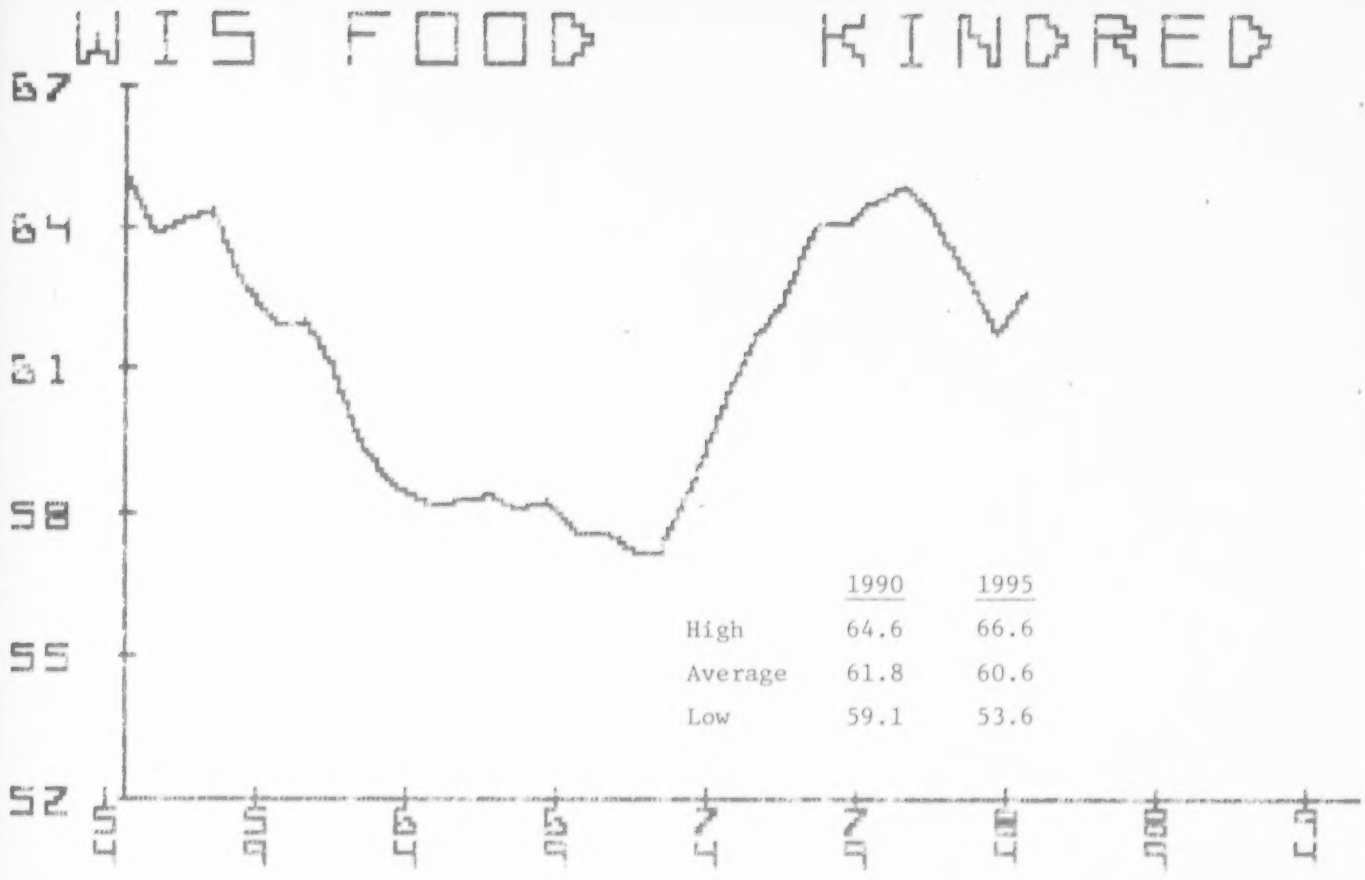


	1990	1995
High	212.4	230.9
Average	200.1	203.9
Low	185.0	175.6

1954	171.5	1961	167.1	1968	178.2	1975	176.7	1982	187.4
1955	171.5	1962	166.3	1969	181.7	1976	182.8	1983	188.4
1956	173.0	1963	164.5	1970	179.4	1977	189.3	1984	196.2
1957	171.8	1964	166.2	1971	175.4	1978	196.0		
1958	166.8	1965	169.4	1972	177.5	1979	197.6		
1959	168.6	1966	173.7	1973	183.3	1980	193.6		
1960	168.7	1967	175.1	1974	185.3	1981	192.0		

Nondurable Goods, like the Durable Goods sector, showed employment recovery in 1984 compared to the previous year. However, unlike Durable Goods, the Nondurable sector achieved 1984 employment that nearly reached the peak pre-recessionary level of 1979.

The panelists indicated only a very modest employment increase in their 1995 forecast, apparently influenced by what they saw as a leveling-off of employment in this sector's major component -- Food and Kindred Products.



	1990	1995
High	64.6	66.6
Average	61.8	60.6
Low	59.1	53.6

1954	65.1	1961	61.0	1968	58.3	1975	61.6	1982	63.0
1955	63.9	1962	59.4	1969	57.6	1976	62.5	1983	61.7
1956	64.2	1963	58.6	1970	57.6	1977	64.1	1984	62.7
1957	64.4	1964	58.2	1971	57.2	1978	64.1		
1958	62.9	1965	58.3	1972	57.3	1979	64.6		
1959	61.9	1966	58.4	1973	58.8	1980	64.9		
1960	62.1	1967	58.1	1974	60.3	1981	64.2		

Food and kindred products had employment of 62,700 in 1984, making it the second largest manaufacturing industry in Wisconsin.

Wisconsin is noted for its breweries and cheese production. Other major food products are canned foods (pickles, vegetables, fruit) frozen and dehydrated fruits and vegetables, bottled and canned soft drinks, bottled sauces and processed meats.

Food industry sectors in March 1985 showed employment figures of 17,800 in dairy products and 13,800 in meat products.

The panel forecasted an average of 61,800 employment for 1990 and an average 60,600 employment for 1995. For 1990 ten of the thirteen panelists predicted employment of over 60,000 and nine of the thirteen panelists predicted over 60,000 for 1995.

The dairy industry promotional campaign has been most effective in helping the growth of this industry.

The newest technology in processing food and the automation of frozen foods are factors which assist this industry to perform more efficiently.

The brewery industry has sustained employment losses over the past few years.

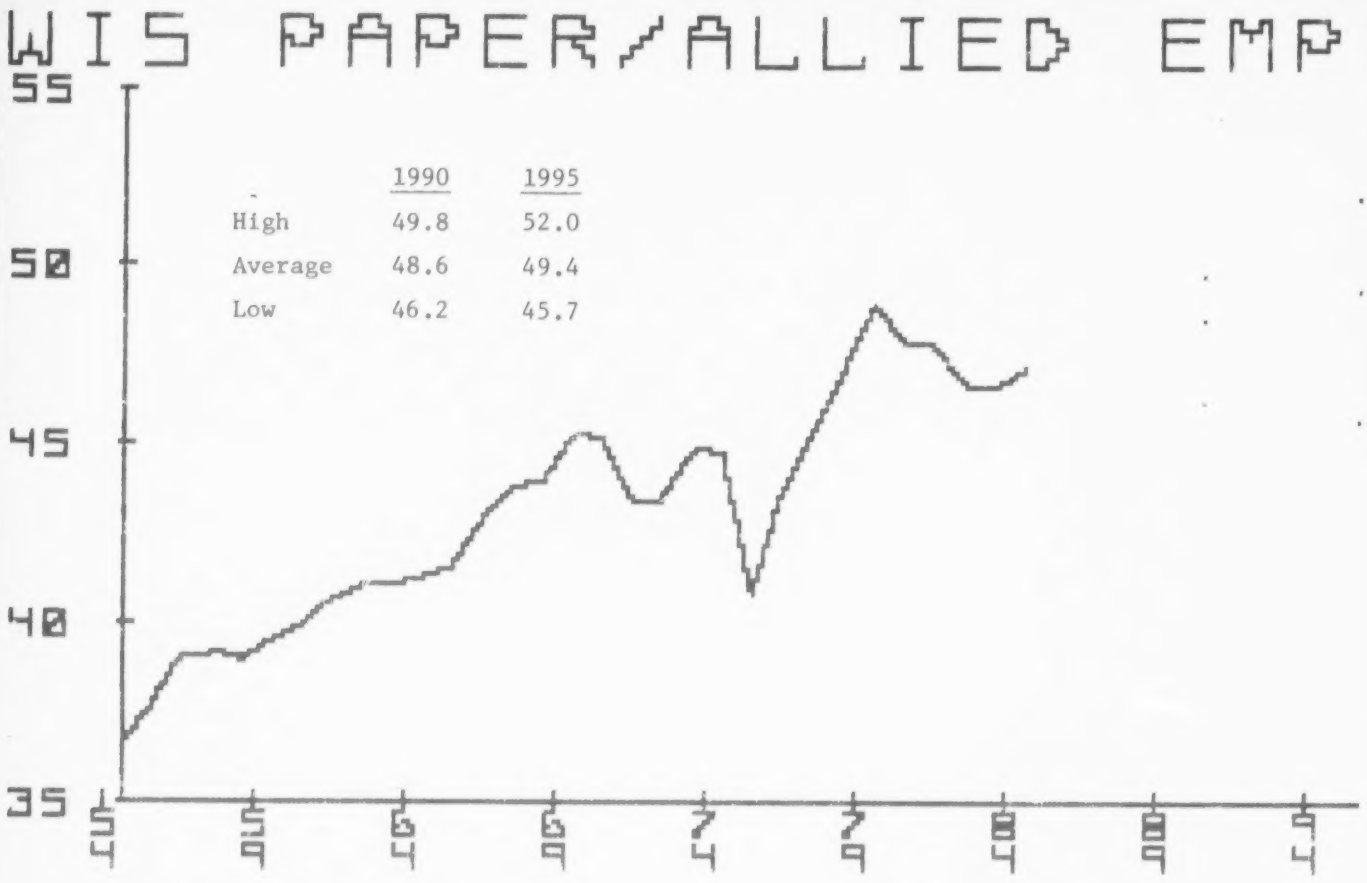
	1990	1995
High	4.3	4.5
Average	4.0	3.8
Low	3.5	3.3

1954	7.9	1961	6.5	1968	6.1	1975	5.3	1982	4.0
1955	8.1	1962	6.5	1969	6.8	1976	5.5	1983	4.2
1956	8.0	1963	6.3	1970	7.0	1977	5.8	1984	4.6
1957	7.5	1964	6.5	1971	6.6	1978	6.1		
1958	6.6	1965	6.7	1972	6.7	1979	5.4		
1959	7.2	1966	6.6	1973	7.0	1980	4.7		
1960	6.9	1967	6.1	1974	6.5	1981	3.9		

The Textile mill products industry has the least employment of all the manufacturing sectors in Wisconsin. However, from 1983 to 1984 the employment increased from 4,200 to 4,600, up ten percent from a year ago.

Two of the major factors influencing the textile industry in Wisconsin are foreign competition and southern states with lower wages.

The forecast shows this industry would stay at 4,000 in 1990 and decline to 3,800 in 1995.



	1990	1995
High	49.8	52.0
Average	48.6	49.4
Low	46.2	45.7

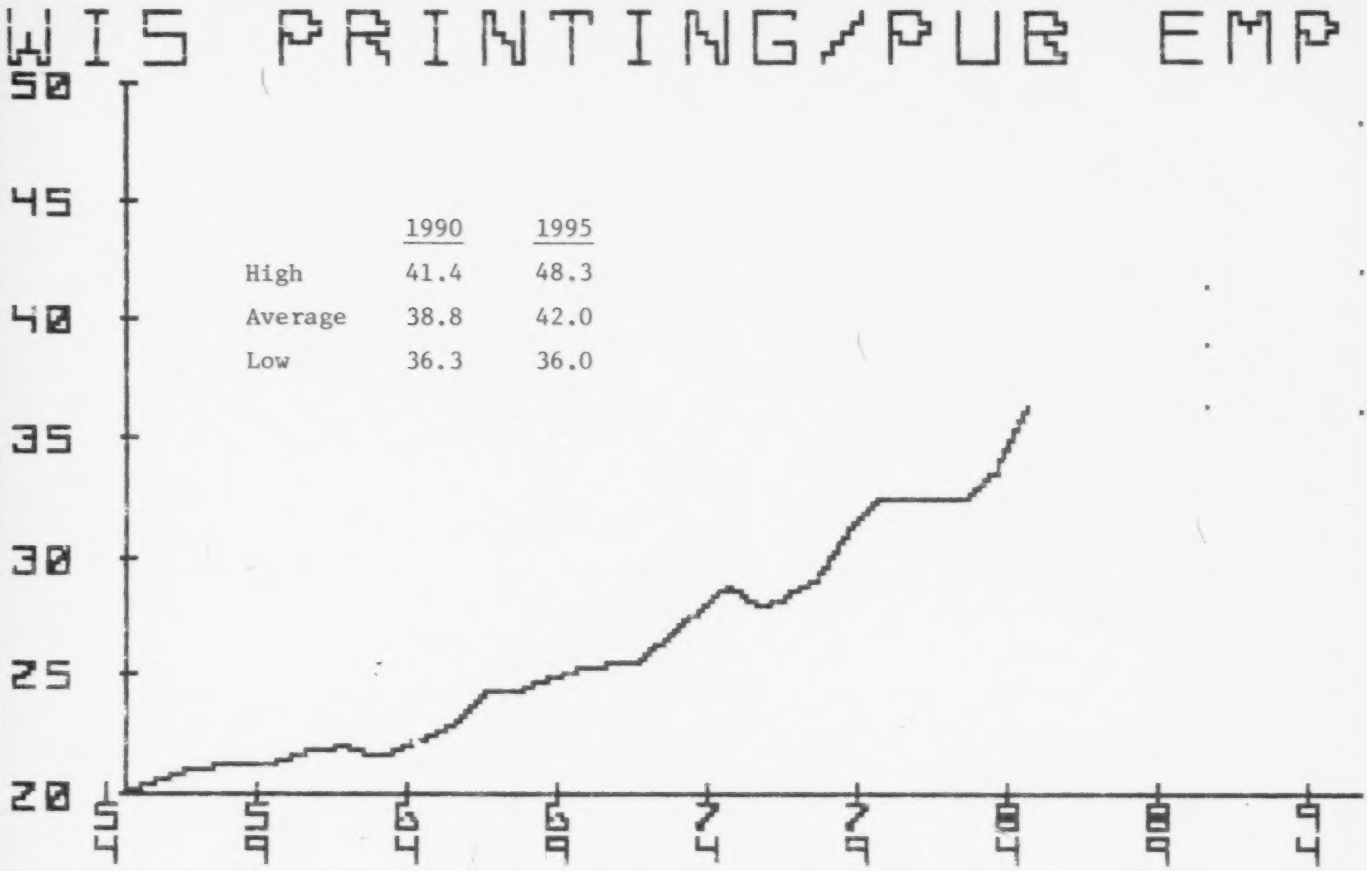
1954	36.5	1961	40.6	1968	44.0	1975	40.8	1982	46.7
1955	37.6	1962	41.0	1969	45.3	1976	43.6	1983	46.7
1956	39.0	1963	41.0	1970	45.0	1977	45.5	1984	47.2
1957	39.2	1964	41.3	1971	43.4	1978	47.2		
1958	38.9	1965	41.6	1972	43.5	1979	48.9		
1959	39.5	1966	42.8	1973	44.8	1980	47.9		
1960	39.9	1967	43.8	1974	44.6	1981	47.8		

There is a slight increase in employment from 1983 to 1984. The paper and allied products industry has 9 percent of the manufacturing employment and ranks fifth in employment among the manufacturing industries in Wisconsin.

Some of the factors which could affect the growth of this industry are imported pulp, more automation and large increase in production volume because of new technology.

Volume of productivity may go up but not employment to the same degree.

The average employment forecast for 1990 is 48.6 and for 49.4 for 1995, which is a 2 percent increase in the five year period. The last time the paper and allied products industry had over 48,000 employed was in 1979.



	1990	1995
High	41.4	48.3
Average	38.8	42.0
Low	36.3	36.0

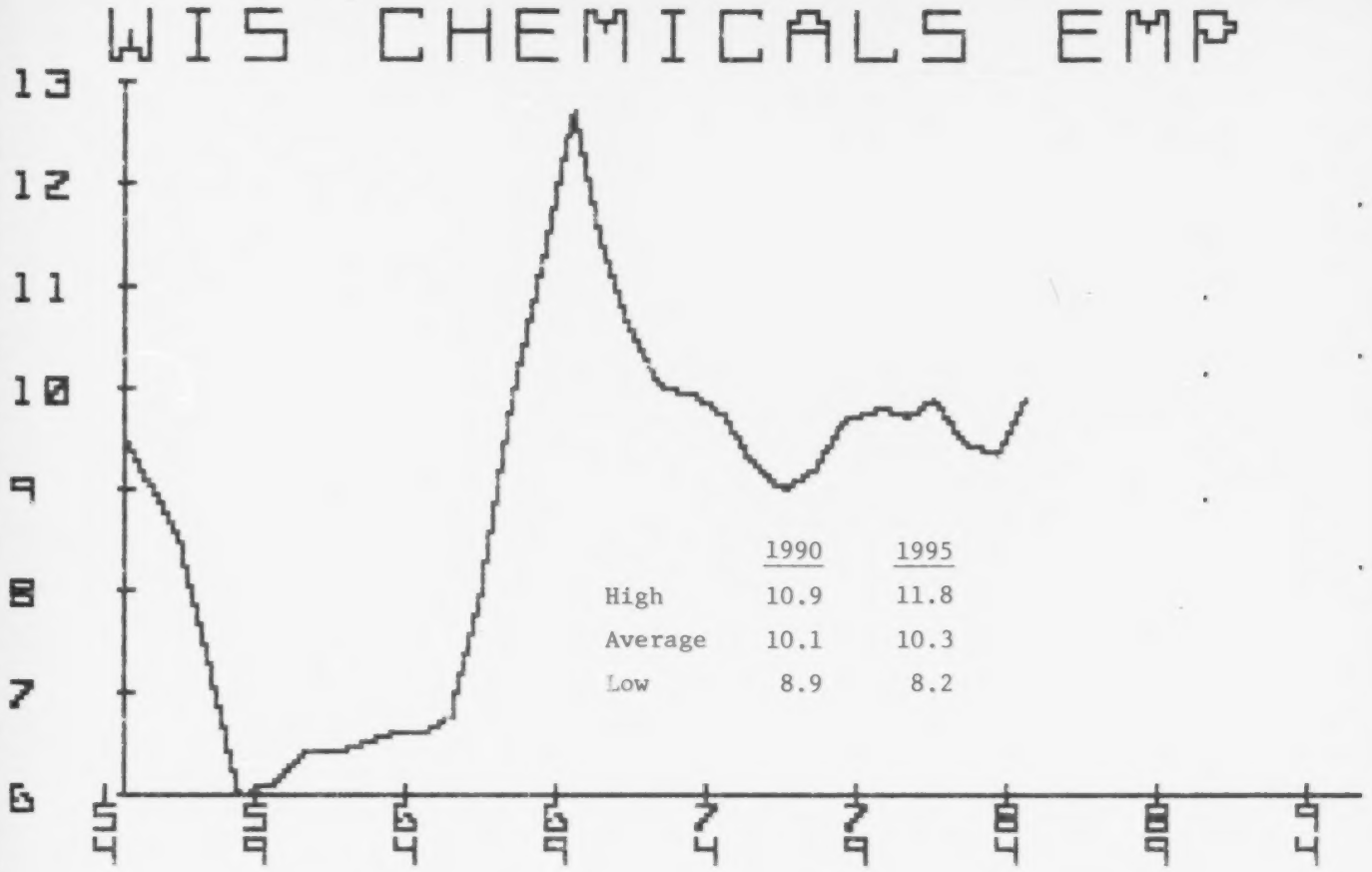
1954	20.2	1961	22.0	1968	24.8	1975	27.8	1982	32.5
1955	20.5	1962	21.6	1969	25.2	1976	28.2	1983	33.6
1956	20.9	1963	21.8	1970	25.4	1977	29.0	1984	36.2
1957	21.1	1964	22.4	1971	25.5	1978	31.0		
1958	21.1	1965	22.9	1972	26.4	1979	32.4		
1959	21.3	1966	24.1	1973	27.6	1980	32.4		
1960	21.8	1967	24.2	1974	28.6	1981	32.3		

Wisconsin's printing and publishing industry employment increased by 2,600 or 8 percent from 1983 to 1984. This industry has been increasing since 1982.

The low forecasts for 1990 and 1995 were similar at 36,300 and 36,000 employment. The average employment forecast shows an increase of 8 percent from 1990 to 1995, while the high employment forecast shows an increase of 17 percent in the five year period.

The newer technology in the printing and publishing industry will cause a large increase in production volume but not necessarily in employment.

Quick print establishments are also increasing as more consumers are using this type of service.



	1990	1995
High	10.9	11.8
Average	10.1	10.3
Low	8.9	8.2

1954	9.5	1961	6.4	1968	11.3	1975	9.2	1982	9.4
1955	9.0	1962	6.5	1969	12.7	1976	9.0	1983	9.3
1956	8.4	1963	6.6	1970	11.3	1977	9.2	1984	9.9
1957	7.2	1964	6.6	1971	10.5	1978	9.7		
1958	6.0	1965	6.8	1972	10.0	1979	9.8		
1959	6.1	1966	8.0	1973	9.9	1980	9.7		
1960	6.4	1967	9.8	1974	9.7	1981	9.9		

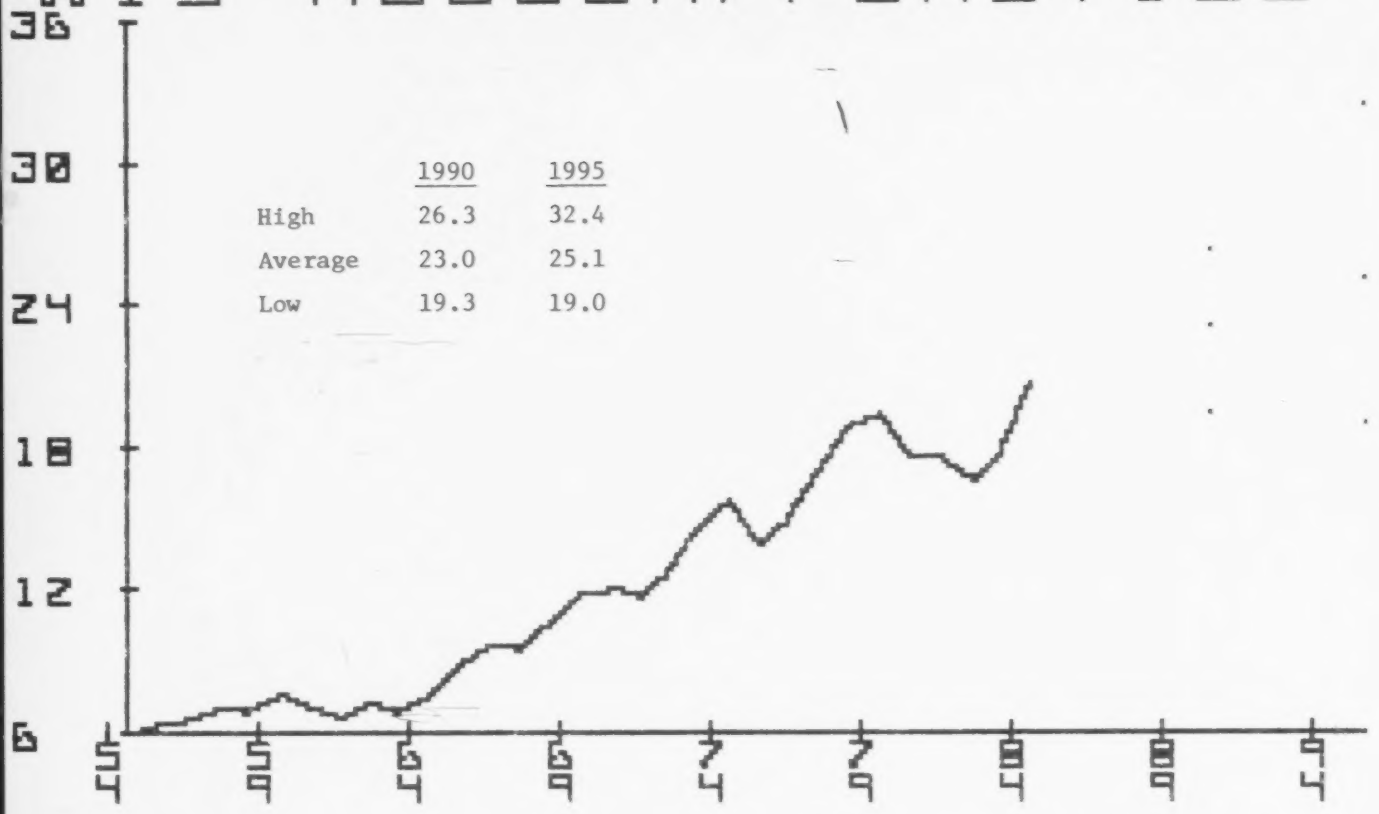
The industry employment increased 6 percent from 1983 to 1984. The highest number of employed in this area was 12,700 in 1969.

Primary products manufactured are organic chemicals for floor care products, dairy industry and pharmaceuticals, paints and sealants, sanitation products and insecticides.

Construction industry and maintenance work use a majority of these products. Federal and state regulation programs have an influence on the growth of this industry.

The panelists forecasted that the employment for the chemicals industry in 1990 would average 10,100 and in 1995,10,300.

WIS RUBBER/PLASTICS



	1990	1995
High	26.3	32.4
Average	23.0	25.1
Low	19.3	19.0

1954	6.0	1961	6.6	1968	10.6	1975	13.8	1982	16.5
1955	6.3	1962	7.2	1969	11.8	1976	14.8	1983	17.7
1956	6.5	1963	6.8	1970	12.1	1977	17.1	1984	20.5
1957	6.9	1964	7.6	1971	11.7	1978	19.0		
1958	6.8	1965	8.7	1972	12.6	1979	19.4		
1959	7.5	1966	9.6	1973	14.7	1980	17.6		
1960	6.9	1967	9.4	1974	15.7	1981	17.6		

The majority of people are employed in the manufacture of plastics. The rubber and miscellaneous plastics industry employed 17,700 in 1983 and 20,500 in 1984, an increase of 16 percent. This is the highest employment this industry has had since 1979, when 19,400 were employed.

As more plastics are used in food packaging and auto production, this industry will grow with increased utilization and consumer demand. Increasingly, however, the auto manufacturers are using "just in time manufacturing" and not letting their parts inventories build.

Rubber manufacturing is dependent on car sales, and this has greater volatility.

Eight of the thirteen panelists predicted the employment for 1990 would be between 22,000 to 24,000, and for 1995 six predicted the employment would be between 24,500 to 26,000.

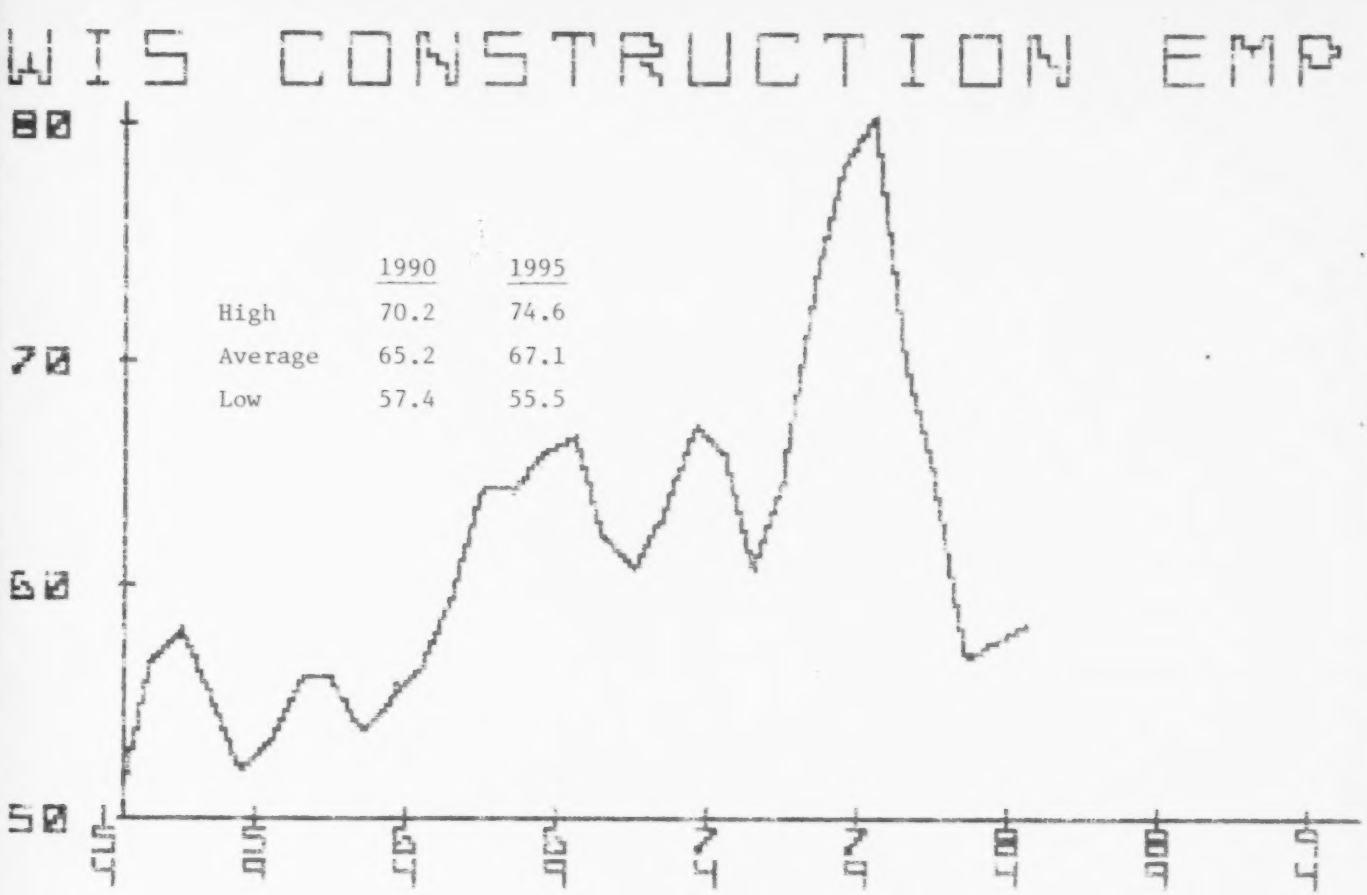
1954	3.9	1961	3.4	1968	2.4	1975	2.7	1982	1.9
1955	4.0	1962	3.1	1969	2.6	1976	2.5	1983	1.9
1956	4.0	1963	2.6	1970	2.6	1977	2.6	1984	1.8
1957	3.9	1964	2.7	1971	2.5	1978	2.6		
1958	3.6	1965	2.8	1972	2.5	1979	2.6		
1959	3.5	1966	2.7	1973	2.6	1980	2.6		
1960	3.8	1967	2.6	1974	2.8	1981	2.4		

The major type of mining in Wisconsin is sand and gravel quarrying. With the increased demand of road construction and maintenance there may be a slight growth in mining. If building construction increases that will also have an effect on Wisconsin's mining industry.

Another major factor in Wisconsin's mining industry is the future for metallic mining, zinc in particular. An increased demand for metallic ore would cause prices to rise and thus the supply. At present, however, depressed metal prices and environmental concerns are major factors affecting mining prospects.

A wild card to add is the exploration for oil.

The employment forecast for this industry has the average at 1,900 for 1900 and 2,000 for 1995. The low employment forecast is 1,600 in 1990 and 1,400 in 1995. For the high employment forecast, 2,000 is predicted for 1990 and 2,700 for 1995. The last time Wisconsin had over 2,000 in employment was 1981 with 2,400.



1954	51.0	1961	55.7	1968	65.9	1975	60.6	1982	56.9
1955	56.9	1962	53.6	1969	66.6	1976	64.7	1983	57.7
1956	58.1	1963	55.0	1970	62.0	1977	73.7	1984	58.3
1957	55.1	1964	56.7	1971	60.7	1978	78.5		
1958	52.0	1965	59.6	1972	62.9	1979	80.5		
1959	53.4	1966	64.2	1973	66.9	1980	70.1		
1960	56.0	1967	64.1	1974	65.6	1981	64.8		

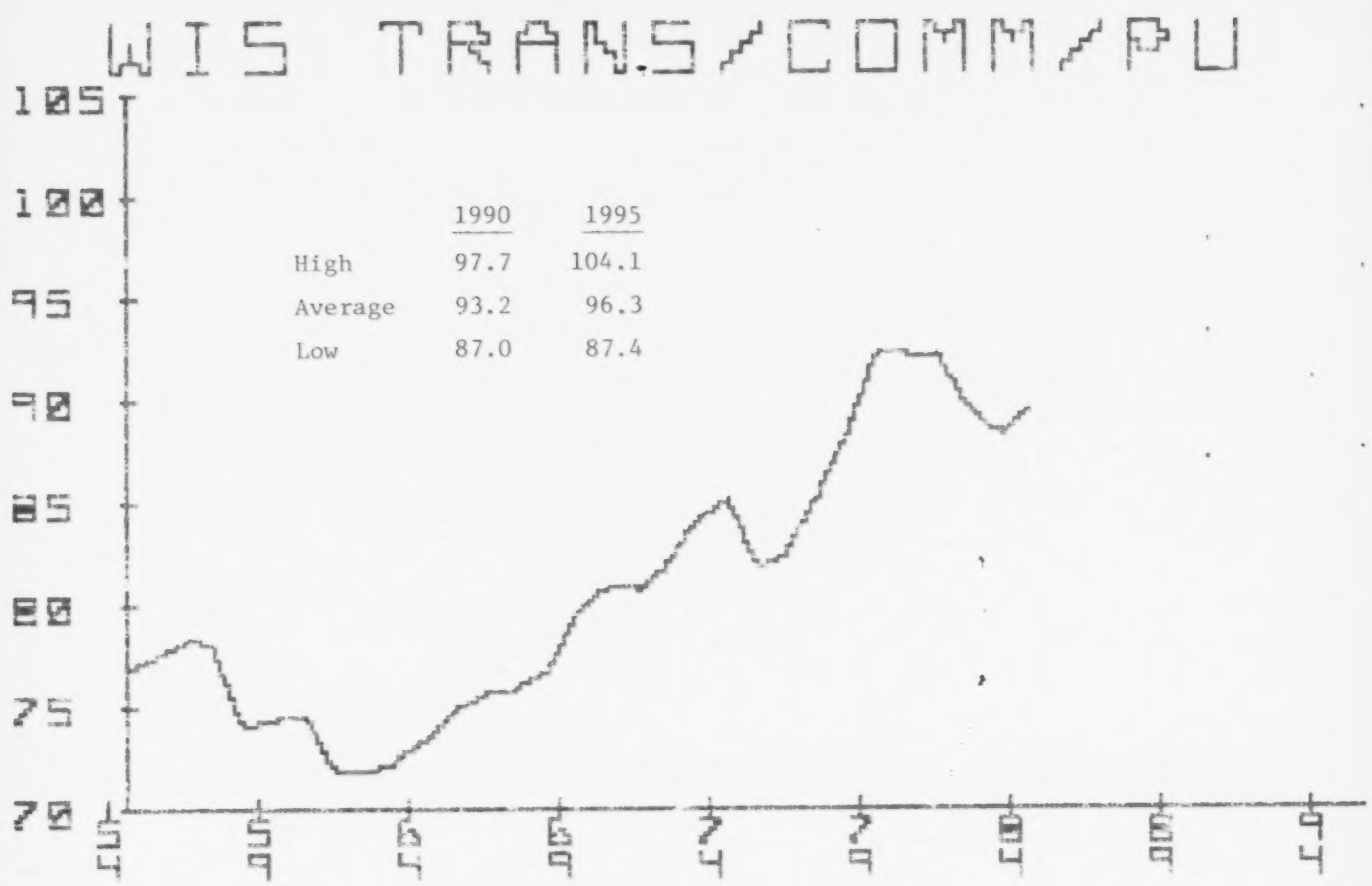
Consumer income and security are important factors when it comes to increased growth in the construction industry. Low interest rates would increase the building construction in both the residential and industrial sectors.

The strong Reaganomics depreciation incentive helped to spur building construction. Proposed changes in tax policy could have the opposite effect.

There will be an upward swing in highway maintenance.

Employment growth will be affected by the technology development in construction methods.

Two of the panelists predicting employment in the construction industry thought it would decrease, but the other eleven thought it would continue to grow moderately. The 1990 average figure of 65,200, if achieved, would represent a 12 percent increase over the 1984 employment.

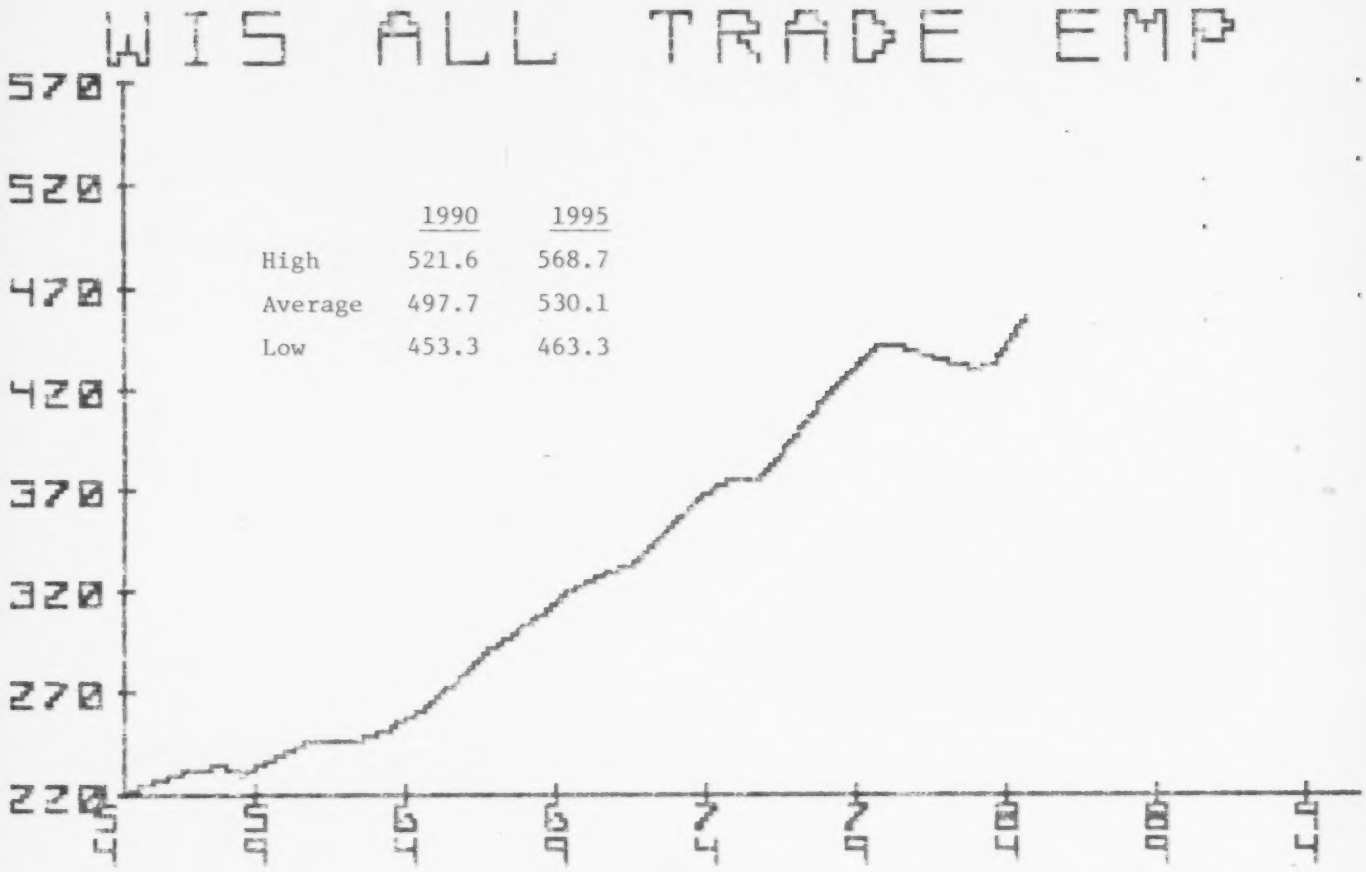


1954	76.7	1961	71.8	1968	76.8	1975	81.7	1982	89.4
1955	77.5	1962	71.7	1969	79.6	1976	82.6	1983	88.1
1956	78.3	1963	72.2	1970	80.9	1977	85.4	1984	89.7
1957	77.7	1964	73.4	1971	80.6	1978	88.4		
1958	73.9	1965	74.9	1972	81.9	1979	92.2		
1959	74.3	1966	75.7	1973	84.1	1980	92.1		
1960	74.5	1967	75.8	1974	85.1	1981	92.3		

In 1984 there were 89,700 employed in this industry. As the population grows there will be an increased demand for public utilities like electric power, water and sanitary services.

The average mean employment forecast for this industry for 1990 is 93,200 and for 1995, 96,300. The forecasted low for both years are similar with 87,000 for 1990 and 87,400 for 1995. There is a decided difference in the forecast for high employment with 97,700 for 1990 and 104,100 for 1995.

Factors the committee thought would influence the growth of this industry are VIDEO communication, trucking business cycle, rapid expansion in communication, fiber optics communication, car versus public transportation and increased competition due to a decrease in regulation.



	1990	1995
High	521.6	568.7
Average	497.7	530.1
Low	453.3	463.3

1954	222.2	1961	244.7	1968	308.7	1975	374.7	1982	428.9
1955	225.1	1962	246.4	1969	321.6	1976	388.8	1983	433.3
1956	230.7	1963	251.3	1970	327.4	1977	410.2	1984	453.8
1957	233.2	1964	260.5	1971	332.1	1978	426.6		
1958	228.8	1965	273.0	1972	346.9	1979	441.2		
1959	236.7	1966	288.0	1973	364.4	1980	436.8		
1960	243.9	1967	298.0	1974	374.3	1981	432.4		

Twenty three percent of the nonfarm wage and salary employment is in the Trade industry. Trade is the second largest employing industry with employment of 453,800 average in 1984. Trade increased by 4.7 percent in employment from 1983 to 1984.

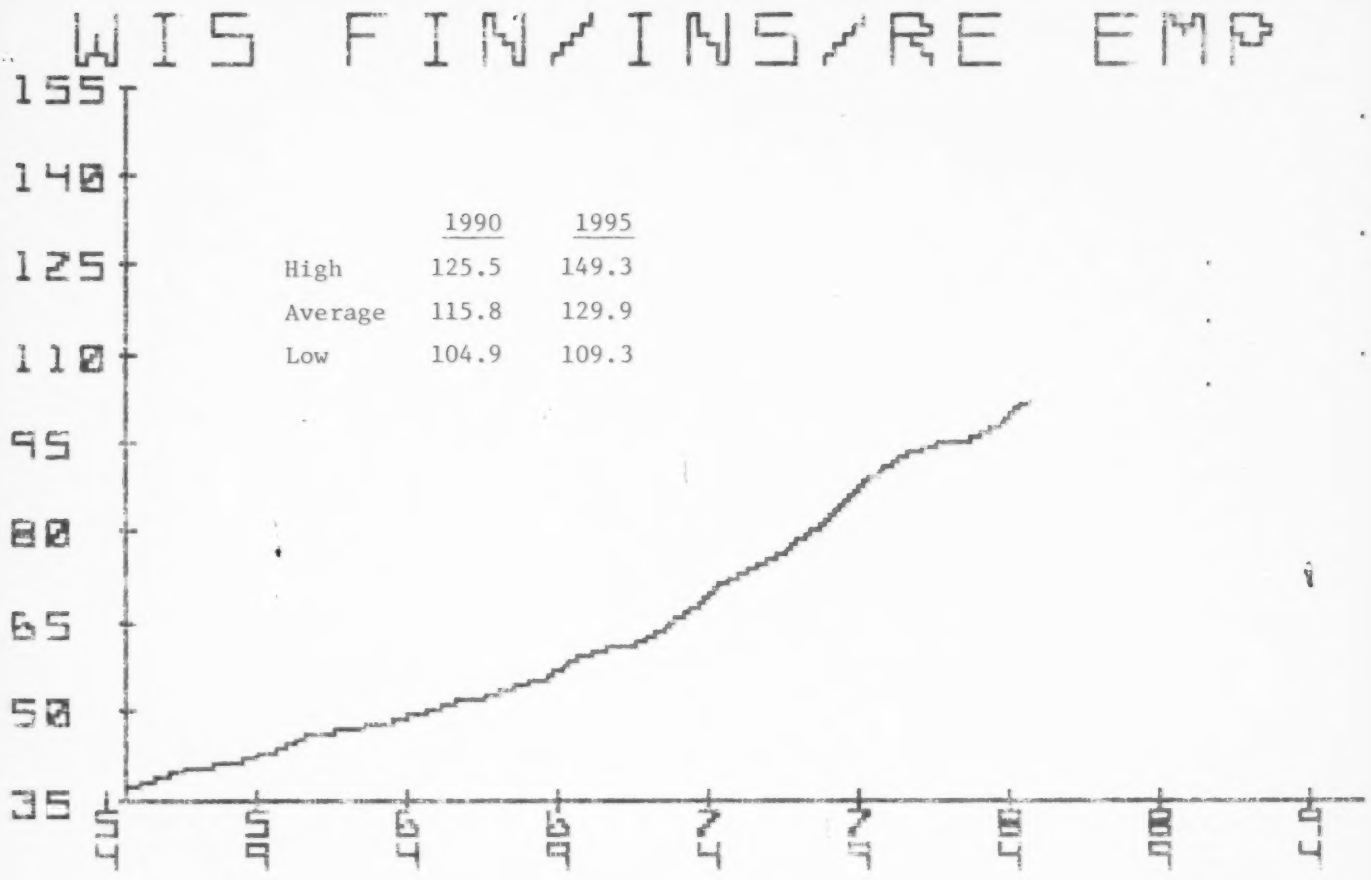
The predictions for employment in the Trade industry in Wisconsin for 1990 are low 453,300, average 497,700, high 521,600 and 1995 low 463,300, average 530,100 and high 568,700. Ten of the fourteen panelists thought employment in 1990 would be 500,000 or more. Again ten of the panelists thought the employment for trade in 1995 would be from 533,800 to 578,300.

Eating and drinking establishments are part of the Trade industry and this area has been growing steadily. An increase in population growth means more consumers to provide with goods and services.

Some of the factors that will affect the growth of the Trade industry are: consumer disposable income, upgrading fast food environment and their variety of foods, and huge warehouse stores.

Part time jobs could increase.

The overbuilding of stores (closing stores as new ones open) would also influence employment.



1954	37.2	1961	47.1	1968	56.2	1975	74.5	1982	95.8
1955	38.5	1962	47.9	1969	58.8	1976	77.0	1983	98.6
1956	40.1	1963	48.8	1970	60.5	1977	81.0	1984	102.2
1957	41.2	1964	50.1	1971	61.4	1978	85.7		
1958	41.7	1965	51.5	1972	64.2	1979	90.3		
1959	43.6	1966	52.4	1973	68.2	1980	93.3		
1960	45.7	1967	54.3	1974	71.8	1981	95.0		

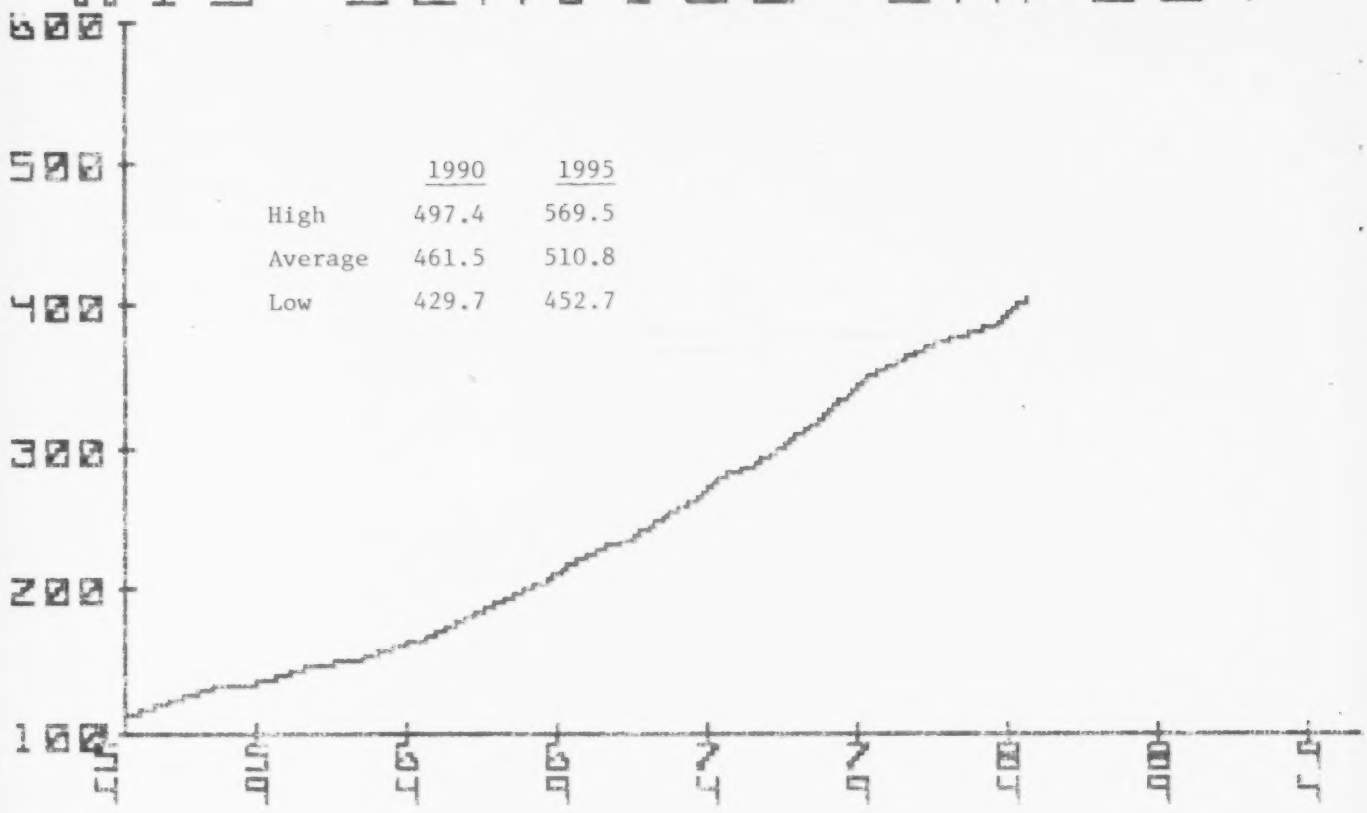
Finance, Insurance and Real Estate increased employment by 3,600 between 1983 and 1984. This industry has grown every year since 1954.

The forecasted employment for Finance, Insurance and Real Estate are low 104,900, average 115,800 and high 125,500 in 1990, and for 1995 a low of 109,300, average of 129,900 and a high of 149,300.

Several factors contribute to growth in this industry. The maturing "Baby Boomers" increase the demand for loans for homes, furniture and autos. Two-income families and the growing elderly population seek financial planning. The economic recovery means more money is available for investments, insurance and financial services.

Automatic tellers and consolidation of insurance or banking personnel could reduce staff. There is a potential for growth in part time employment.

WIS SERVICE EMPLOY



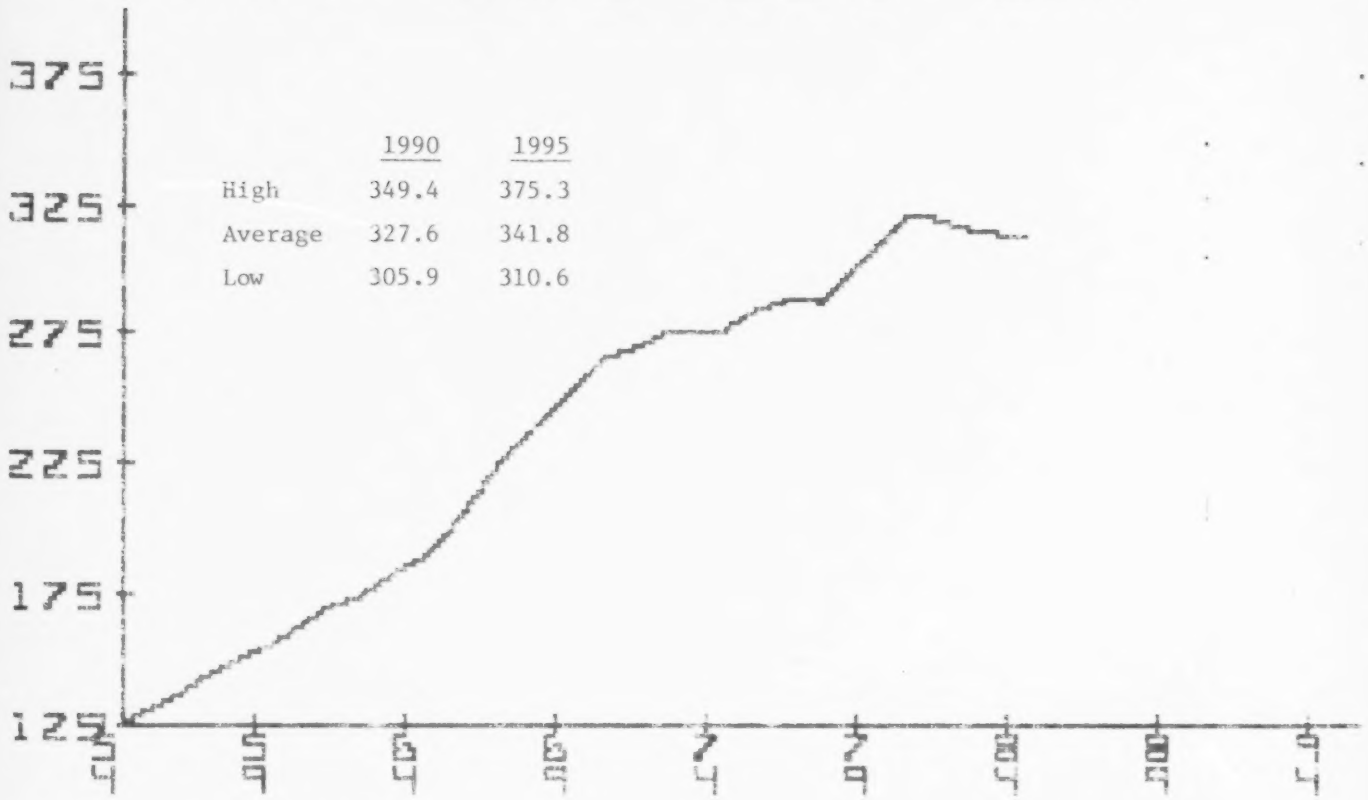
1954	111.4	1961	148.0	1968	207.2	1975	290.2	1982	381.5
1955	117.1	1962	154.0	1969	219.7	1976	302.4	1983	388.6
1956	126.6	1963	160.5	1970	230.7	1977	319.0	1984	403.9
1957	133.2	1964	167.5	1971	238.3	1978	337.3		
1958	133.5	1965	177.1	1972	251.2	1979	351.9		
1959	139.8	1966	187.3	1973	266.3	1980	364.2		
1960	144.3	1967	196.7	1974	280.7	1981	374.9		

The Service industry is the third largest industry in Wisconsin and has had steady growth since 1979, continuing a pattern of growth since 1954. As the population matures there will be a need for a variety of services.

Some of the services in this category are health care, legal assistance, accounting services, personal services (beauty and barber shops), motels, hotels and automotive repair shops.

Nationwide, service producing industries are projected to account for about 75 percent of all new jobs between 1982 and 1995. The majority of the panelists contributing to Wisconsin projections thought there would be an increase of 14 percent from 1984 to 1990 and an increase of 11 percent from 1990 to 1995 at the average growth level.

There are many factors that play a significant part in the future of the Services industry. Use of new technology in business services (development of software, programming) government support, private social services and education, tax simplification, child care needs, clinic and home health care for the elderly, decreased hospital employment, legal services (because of more litigation) and franchise of temporary help and employment agencies are a few.



1954	125.3	1961	170.4	1968	244.6	1975	285.4	1982	314.1
1955	131.0	1962	174.7	1969	255.3	1976	288.6	1983	312.4
1956	137.7	1963	181.7	1970	265.5	1977	287.1	1984	313.6
1957	143.9	1964	190.4	1971	270.2	1978	298.2		
1958	149.7	1965	201.0	1972	275.8	1979	310.1		
1959	155.0	1966	215.2	1973	276.3	1980	321.1		
1960	163.2	1967	230.3	1974	276.9	1981	318.0		

Local government made up 66 percent of the government employment for Wisconsin in 1984 followed by state government at 25 percent and federal government at 9 percent. All three areas together make government the fourth largest industry in Wisconsin. Both the state and local governments increased slightly in employment between 1983 and 1984 while the federal government decreased by 1.5 percent.

The average level forecasts for Wisconsin government employment shows a modest four percent increase by 1990 and an additional four percent by 1995.

Some of the factors which will affect the government employment in the future are growth of adult education, transfer of more responsibilities from federal to local government, increase in automation (rise of computers) in public sector jobs, growth of prisons, and public philosophy and priorities.

	WISCONSIN INDUSTRIAL EXPERIENCE (IN THOUSANDS)			WISCONSIN FORECAST 1990 & 1995 (IN THOUSANDS)					
				1990			1995		
	1970	1980	1984	(1)HIGH	(2)AVERAGE	(3) LOW	(1)HIGH	(2)AVERAGE	(3)LOW
NONFARM WAGE & SALARY	1530.4	1938.1	1941.1	2251.7	2105.6	1922.3	2475.2	2233.4	1940.9
MANUFACTURING	500.9	558	517.8	587.9	542.7	482.5	631	555.5	460.7
DURABLE GOODS	321.5	364.4	321.7	375.5	342.6	297.5	400.1	351.5	285.1
24 LUMBER & WOOD PROD	15.6	20.7	21.5	23.7	22	20.1	27.7	23.1	19.7
25 FURNITURE & FIXTURES	7.8	9.6	10.3	11.4	10.1	8.7	12.2	10	7.7
32 STONE CLAY & GLASS	8.1	9.1	7.4	9.2	8.2	6.6	9.8	8.4	5.9
33 PRIMARY METAL IND	30.1	26.1	19.9	23.3	21.5	17.3	24.8	21.7	16.7
34 FAB. METAL PRODUCTS	43.8	58.4	50.9	60.8	56.4	48.9	64.2	58.3	48.7
35 NON-ELECTRICAL MACH	108.2	125.7	102.2	122.1	112.6	98.5	130	116.1	94.1
36 ELECTRICAL MACHINERY	48.6	56.8	52.6	61	54.3	48.3	63.3	55.4	47
37 TRANSPORTATION EQUIP	36.2	34.7	36.1	38.9	34.6	30	40.5	34.3	26.7
38 PROF SCI & CONTROL INS	9	12.4	10.7	14.3	13	11.3	16.3	14.1	11.5
39 MISC MFG INDUSTRIES	14.1	10.9	10.1	10.8	9.8	7.8	11.3	10	7.1
NONDURABLE GOODS	179.4	193.6	196.2	212.4	200.1	185	230.9	203.9	175.6
20 FOOD & KINDRED PROD	57.6	64.9	62.7	64.6	61.8	59.1	66.6	60.6	53.6
22 TEXTILE MILL PROD	7	4.7	4.6	4.3	4	3.5	4.5	3.8	3.3
23 APPAREL & OTHER FIN PR	6.8	6.5	6.5	6.9	6.2	5.2	7.8	6.1	4.5
26 PAPER & ALLIED	45	47.8	47.2	49.8	48.6	46.2	52	49.4	45.7
27 PRINTING PUB & ALLIED	25.4	32.4	36.2	41.4	38.8	36.3	48.3	42	36
28 CHEM & ALLIED PROD	11.3	9.7	9.9	10.9	10.1	8.9	11.8	10.3	8.2
30 RUBBER & MISC PLASTICS	12.1	17.6	20.5	26.3	23	19.3	32.4	25.1	19
31 LEATHER & LEATHER PROD	13.9	9.4	8.1	7.7	7.1	6.2	7	6.3	5
OTHER NONDURABLE GOODS	.4	.4	.4	.5	.4	.3	.5	.4	.3
10-14 MINING	2.6	2.6	1.8	2	1.9	1.6	2.7	2	1.4
15-17 CONSTRUCTION	62	70.1	58.3	70.2	65.2	57.4	74.6	67.1	55.5
40-49 TRANS COMM & PUB UTIL	80.9	92.1	89.7	97.7	93.2	87	104.1	96.3	87.4
50-59 TRADE	327.4	436.8	453.8	521.6	497.7	453.3	568.7	530.1	463.3
60-67 FIN INS & REAL ESTATE	60.5	93.3	102.2	125.5	115.8	104.9	149.3	129.9	109.3
70-89 SERVICE & MISC	230.7	364.2	403.9	497.4	461.5	429.7	569.5	510.8	452.7

	WISCONSIN INDUSTRIAL EXPERIENCE (IN THOUSANDS)			WISCONSIN FORECAST 1990 & 1995 (IN THOUSANDS)					
				1990			1995		
	1970	1980	1984	(1)HIGH	(2)AVERAGE	(3) LOW	(1)HIGH	(2)AVERAGE	(3)LOW
90-94 GOVERNMENT	265.5	321.1	313.6	349.4	327.6	305.9	375.3	341.8	310.6

(1) ARITHMATIC MEAN OF THREE HIGHEST FORECASTS

(2) ARITHMATIC MEAN OF ALL FORECASTS

(3) ARITHMATIC MEAN OF THREE LOWEST FORECASTS

• TOTALS MAY NOT ADD DUE TO ROUNDING

• ANNUAL AVERAGE DATA ON 1984 BENCHMARK

N.B. DATA BELOW IND DIVISION LEVEL FOR 1970 ON 1967 SIC

Section C. Wages In Wisconsin

In early 1985 separate wage surveys were completed for the state as a whole, for each of the seventeen Service Delivery Areas (SDA's) and for eight Metropolitan Statistical Areas (MSA's). A catalog of occupational definitions used in the surveys was also prepared.

The survey format was decided upon by employers across the state. Different test formats were taken to 15 employers across the state. The employers varied in size from under 10 to over 250 employees, in industry from health to manufacturing, in location from city to rural, as well as many other variables. The final results of the employer research indicated a majority wanted the employer survey to ask for exact wages, not ranges, as well as a short two- or three-sentence description rather than an occupational title with little or no description. The research also indicated the smaller establishments would be less likely to complete a long detailed survey versus a short, nondescriptive form using pay ranges. The opposite was true of larger employers.

The list of employers was taken from the Unemployment Compensation Master File. Both size of establishment and random selection were used to select employers. Firms in Manufacturing; Construction; Transportation, Communication and Public Utilities; Wholesale and Retail Trade; Finance, Insurance and Real Estate and Services were surveyed. (The survey results are also reported in the same division arrangement.) Some of the classifications not surveyed include Agriculture; Forestry and Fishing; Mining, Tobacco Manufacturers, Petroleum and Coal Producers; and U.S. Postal Service.

Criterion for surveying varied from industry to industry. All Manufacturing firms (except Tobacco, Petroleum and Coal Products), with employment over 10 were surveyed. Most of the Health Services with employment over one (1) were surveyed, thus including offices of dentists, osteopathic physicians and other small office industries.

Overtime, late shifts, weekend or holiday work, nonproduction bonuses, commissions, P.M.'s (afternoon and evening shifts) and fringe benefits were not included in the wages. Although temporary employees were not included, part-time employees were included because of the heavy concentration of part-time employees in the health and trade industries. A detailed listing of the industries and firm sizes surveyed is included in an Appendix in each wage survey publication. The categories conform to those in the Standard Industrial Classification Manual 1972. Should questions arise as to the content of a group, the user should refer to this manual.

The reporting format includes number of firms, number of workers, mean wage, median wage, starting level mean wage and hourly wages. Because this survey collected hourly wages, or wages that were converted to exact hourly wages, the reported mean or average wage is an exact wage, not an average $\pm$ a dollar or two. An alphabetical list of job titles and descriptions, used in the surveys, is published separate from the surveys.

In some cases, the median starting wage is higher than the mean or median wage. This is not a mistake. In these cases, only establishments with high starting wages reported starting wages.

Over 800 employers took the time to complete the last section of the survey and suggest occupations they would like to see in future surveys. By deleting the occupations with "no response" and adding occupations the employers would like to see, the next survey will be less cumbersome and more useful to all users of survey information.

DEFINITIONS

Mean Wage

The mean rate is calculated by first multiplying each reported individual wage rate times its corresponding frequency (number of workers), then adding these products to arrive at a sum total. The sum total of all the products is then divided by the total frequency (total number of workers) to determine the average wage.

Median Wage

The median is the wage rate that divides the wage distribution into two equal parts. There are as many wages in the sample above the median wage as there are below it.

A sample page follows.

E X A M P L E

WAGE SURVEY REPORT--STATEWIDE

	NUMBR OF FIRMS	NUMBR OF WORK-ERS	MEAN WAGE	MDIAN WAGE	STRT-ING LEVEL MEAN WAGE	HOURLY WAGE 2.85 TO 3.99	4.00 TO 4.99	5.00 TO 5.99	6.00 TO 6.99	7.00 TO 7.99	8.00 TO 9.99	10.00 TO 11.99	12.00 TO 13.99	14.00 TO 15.99	16.00 TO 17.99	18.00 TO 19.99	20.00 TO 24.99	25.00 OR MORE
ALL INDUSTRIES																		
ACCOUNTANT	392	647	10.93	10.57	8.69	0	4	24	37	69	122	175	119	63	17	5	8	4
ACCOUNTING CLERK	494	1214	6.71	6.28	5.15	25	128	336	296	177	192	36	19	5	0	0	0	0
ACTIVITY COORD.	41	117	5.47	4.98	5.08	8	51	28	6	9	15	0	0	0	0	0	0	0
ACTUARY	15	58	16.05	13.40	11.28	0	0	0	0	0	2	8	22	4	2	4	10	6
ADMIN. ASSISTANT	603	929	10.52	9.26	7.76	5	20	51	93	164	191	126	114	58	39	30	26	12
ADMIN. SECRETARY	469	728	8.22	7.60	6.43	11	28	84	120	158	215	51	31	10	6	6	3	5
ADMITTING CLERK	48	352	6.18	6.25	5.22	3	31	105	117	93	2	1	0	0	0	0	0	0
AGRI. CHEM. SALESPER.	1	DATA IS CONFIDENTIAL DUE TO 2 OR LESS RESPONSES																
AGRI. EQUIP. SALESPER.	0	0	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR HAMMER OPER.	3	6	10.95	10.61	12.37	0	0	0	0	0	3	1	2	0	0	0	0	0
ALL-ROUND BUTCHER	16	250	7.55	8.50	5.76	1	28	22	16	37	146	0	0	0	0	0	0	0
ANNOUNCER	16	90	6.32	5.03	3.77	12	28	16	10	10	7	2	2	0	0	1	1	1
ARCHITECT	44	106	13.27	12.50	9.31	0	0	0	0	4	11	27	28	16	7	6	7	0
ARCHITECT. LANDSCAPE	1	DATA IS CONFIDENTIAL DUE TO 2 OR LESS RESPONSES																
ART DIRECTOR	18	21	10.70	10.50	7.46	0	0	1	2	1	4	6	4	2	1	0	0	0
ASSEMBLER. CLASS A	146	4355	10.81	13.40	6.53	19	226	338	217	435	348	293	2448	25	5	1	0	0
ASSEMBLER. CLASS B	130	2954	8.30	7.73	5.75	230	189	334	402	359	629	86	717	3	5	0	0	0
ASSEMBLER. CLASS C	83	2130	6.59	6.48	5.36	42	522	348	470	264	440	11	18	14	1	0	0	0
AUDITOR	94	153	10.95	10.17	9.30	0	14	5	10	18	28	18	23	18	7	4	8	0
AUTO. MECHANIC HELPER	81	223	5.72	5.00	4.33	35	75	38	30	9	11	25	0	0	0	0	0	0
AUTOMOBILE MECHANIC	221	863	9.02	8.10	6.19	22	29	85	142	125	162	66	228	3	1	0	0	0
AUTOMOBILE UNDWRITER	4	11	7.36	6.53	6.00	0	1	2	5	1	0	0	2	0	0	0	0	0
BACK TENDERS	16	180	11.26	11.45	10.59	0	0	0	0	0	31	94	55	0	0	0	0	0
BAG MACH. OPER.	3	34	7.95	7.69	8.78	0	0	0	5	23	4	2	0	0	0	0	0	0
BAKER	14	41	7.41	7.25	5.37	9	2	6	3	2	4	15	0	0	0	0	0	0
BARBER	2	DATA IS CONFIDENTIAL DUE TO 2 OR LESS RESPONSES																
BARTENDER	135	776	4.30	4.00	3.83	224	403	112	26	8	2	1	0	0	0	0	0	0
BEATER ENGINEER	14	134	11.12	11.26	10.23	0	0	0	0	0	34	64	36	0	0	0	0	0
BILL. MACH. OPER.	79	121	6.30	6.45	5.10	0	11	38	45	17	7	3	0	0	0	0	0	0
BILLING CLERK	232	432	6.34	6.15	5.10	7	45	130	146	59	32	8	5	0	0	0	0	0
BINDERY WORKER	53	337	5.71	5.50	4.40	89	60	58	46	32	28	15	8	1	0	0	0	0
BLOW-MOLD.MACH.OPER.	5	91	6.80	6.25	5.20	0	0	40	19	1	31	0	0	0	0	0	0	0
BOAT REPAIRER	0	0	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0
BOOK. MACH. OPER.	68	90	6.03	5.70	4.69	5	15	37	11	10	10	1	1	0	0	0	0	0
BOOKKEEPER	1169	1651	6.67	6.25	5.19	55	215	408	356	251	265	61	29	9	2	0	0	0
BOTTLE SORTER	14	19	3.64	3.35	3.36	16	1	2	0	0	0	0	0	0	0	0	0	0
BOTTOMING-MACH. OPER.	0	0	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0
BOX SEALING MACH. OPER	4	20	9.81	8.90	9.60	0	0	0	0	0	12	8	0	0	0	0	0	0
BRAZER. INDUCTION	9	24	9.27	9.80	6.66	0	0	2	3	1	9	8	1	0	0	0	0	0

PART IV. OCCUPATIONAL SUPPLY AND DEMAND

Section A. Occupational Replacement Needs

Employment opportunities result from the need for additional workers (growth) and the need to replace workers who leave an occupation (separation). In most occupations, replacement needs provide more employment opportunities than growth. Therefore, information about replacement needs is especially valuable when determining occupational outlook and assessing the need for training programs.

Not everyone who leaves an occupation is replaced. For example, if "X" number of aircraft mechanics leave their jobs during a given year because of permanent or temporary layoffs, retirement, or because they have entered different occupations, the same number of aircraft mechanics may not necessarily be hired to replace them. In fact, with economic uncertainty, deregulation and airline mergers, it is likely replacements will be fewer than the number who left.

The Bureau of Labor Statistics keeps track of separations from which it determines separation rates, that is, the percentage of persons in specific occupations who leave those occupations during a given year. Through additional studies of job mobility, the BLS then determines replacement rates, that is, the percentage of persons who leave an occupation and are replaced. A key element of this procedure is determining the number who actually change their occupations.*

Changing economic conditions, the movement of individuals and businesses from state to state, and differing industry mixes among the states, mean that the national rates may differ from the states' rates. The question becomes, can states (which do not have the means to duplicate the BLS replacement rate procedure) use the national replacement rates in assessing state job outlook?

To answer, Wisconsin used national separation rates and adjusted them to the state using census occupational data, applying such factors as age and sex. The following table shows that, given the statistical errors that may exist, there appears to be little significant difference between the national and state-adjusted estimates for total separations and for those who changed occupations.

The table also shows that the national replacement rates are sometimes the same as, or close to, the separation rates for a good number of the occupations selected for comparison. The occupations in which rates differ markedly (note some construction jobs and blue collar manufacturing jobs) are not surprising to note at the national level or would they be unexpected at the state level, given the economy of the 1980's.

Because of the similarities cited above, and the improvements in developing national replacement rates, we feel that national replacement rates can be used in preparing state and local area estimates of occupational replacement needs.

*"New Occupational Separation Data Improve Estimates of Job Replacement Needs", Monthly Labor Review, March 1984, BLS, Dept. of Labor.

	REPLACEMENT RATES	SEPARATION RATES			
		TOTAL		TRANSFER TO ANOTHER OCCUPATION	
	U.S.	U.S.	WIS.	U.S.	WIS.
Accountants	8.2%	8.2%	8.4%	4.0%	4.2%
Computer Programmers	8.7	8.7	9.4	4.7	5.1
Computer Systems Analysts	5.3	5.3	5.8	4.0	4.4
Electrical Engineers	4.1	4.1	4.0	1.6	1.6
Mechanical Engineers	4.3	6.2	6.2	4.4	4.4
Lawyers	4.8	4.9	4.9	2.6	2.6
Dentists	1.2	1.2	1.3	0.0	0.0
Physicians	1.4	1.4	1.3	0.0	0.0
Pharmacists	5.9	6.9	6.5	1.9	1.9
Registered Nurses	10.2	10.2	10.5	2.3	2.3
Therapists	10.2	10.2	10.7	4.4	4.4
Secondary School Teachers	9.3	9.3	8.9	4.0	4.0
Drafters	12.6	12.6	13.3	6.7	7.2
Electrical and Electronic Technicians	10.8	11.4	11.7	6.6	6.8
Sales Workers, Retail	22.3	23.4	24.0	13.2	13.2
Cashiers	33.1	33.1	34.6	14.3	14.4
Bank Tellers	20.9	21.6	22.0	14.0	14.4
Typists	24.2	24.2	24.5	11.7	11.9
Secretaries	17.9	18.0	18.1	8.1	8.1
Receptionists	27.6	27.6	27.8	13.5	13.5
File Clerks	38.1	38.1	39.2	16.8	17.4
Bookkeepers	18.8	19.1	17.4	7.6	6.9
Telephone Operators	20.1	23.7	24.2	15.2	15.5
Data Entry Keyers	19.7	24.9	25.8	15.3	15.8
Firefighters	4.1	4.1	4.0	1.8	1.7
Police	7.1	8.8	8.9	5.5	5.5
Guards	25.2	25.2	30.7	10.6	11.8
Waiters and Waitresses	39.8	40.2	44.1	18.7	19.6
Cooks	30.2	30.2	32.0	13.7	14.0
Nursing Aides, Orderlies	25.5	25.5	27.8	10.1	10.9
Carpenters	20.0	24.0	23.0	9.5	9.2
Electricians	8.4	10.5	9.6	2.6	2.4
Machinists	11.6	12.3	15.0	5.7	6.8
Aircraft Mechanic	8.0	14.3	18.2	8.4	10.4
Painters, Construction and Maintenance	22.7	22.7	21.7	7.4	7.3
Tool-and-Die Makers	6.0	10.7	11.5	4.4	4.8
Assemblers	23.4	29.1	29.5	11.8	12.1
Garage Workers, Gas Attendants	43.5	44.5	48.3	21.5	22.6
Laundry, Dry Cleaning Operatives, n.e.c.	25.3	27.8	30.6	9.5	9.7
Bus Drivers	16.3	16.3	17.5	5.6	6.1

Section B. Applicants and Openings by SOC
SOC - Supply/Demand

The following tables show the four-digit Standard Occupational Code (SOC) assigned to Job Service applicants (cross walked from the Dictionary of Occupational Titles) and the number of openings (supply/demand) from Job Service orders. It is an end of May 1985 snapshot view of active job applicants data (as of May 30, 1985) and unfilled job openings (as of June 4, 1985). Again, this is a snapshot view, not a cumulative report. Where an applicant had multiple registrations (same social security number, but more than one office) the record with the most recent contact data was used. The openings figure represents openings, not orders.

The data was summarized by SOC. In order to convert to a specific SOC, a complete, valid nine-digit DOT code was needed. Otherwise, a pseudo SOC code of 9999 was assigned. This way each job applicant and opening file by occupation was entirely accounted for.

The occupation with the largest number of surplus active applicants (10,378 more applicants than openings) is Assembler, SOC code 7720. This is to be expected since this is the "standard" low-skilled assembler occupation found in many manufacturing industries. As of the end of May, 1985, there were 10,820 active applicants and 442 unfilled job openings -- a ratio of 24.4 applicants to each opening.

The occupation with the second largest number of surplus active applicants is Freight, Stock and Material Movers Not Elsewhere Classified, SOC 8726. At the end of May, 1985, there were 10,864 active applicants and 617 unfilled openings -- a surplus of 10,247 applicants, or a ratio of 17.6 applicants to each opening. This, again, is a relatively low-skilled occupation found in many industries.

A close look at the individual occupations reveals that many specialized occupations such as Economists, Archivists and Curators, etc., generally requiring college and advanced college degrees, have a very high ratio of applicants to openings. It is impossible to determine at this time the status of the applicants. These applicants could be unemployed, laid off, recent college graduates, employed but looking for other jobs, etc. Therefore, care must be taken when making assumptions from the applicant/openings numbers.

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
1120	CHIEF EXECUTIVES AND GENERAL ADMINISTRATORS	1	.
1131	JUDICIAL, PUBLIC SAFETY AND CORRECTIONS ADMINISTRAT	9	.
1132	HUMAN RESOURCES PROGRAM ADMINISTRATORS	13	.
1133	NATURAL RESOURCES PROGRAM ADMINISTRATORS	11	1
1134	RURAL, URBAN, AND COMMUNITY DEVELOPMENT PROGRAM ADM	9	2
1135	PUBLIC FINANCE, TAXATION, AND OTHER MONETARY PROGRA	11	.
1139	OFFICIALS AND ADMINISTRATORS, PUBLIC ADMINSTRATION,	53	1
1210	GENERAL MANAGERS AND OTHER TOP EXECUTIVES	315	9
1220	FINANCIAL MANAGERS	172	1
1230	PERSONNEL AND LABOR RELATIONS MANAGERS	170	1
1240	PURCHASING MANAGERS	61	4
1250	MANAGERS; MARKETING, ADVERTISING, AND PUBLIC RELATI	575	10
1260	MANAGERS; ENGINEERING, MATHEMATICS, AND NATURAL SCI	60	2
1270	MANAGERS; SOCIAL SCIENCES AND RELATED FIELDS	86	7
1281	ADMINISTRATORS; COLLEGES AND UNIVERSITIES	18	5
1282	ADMINISTRATORS; ELEMENTARY AND SECONDARY EDUCATION	136	27
1283	ADMINISTRATORS; EDUCATION AND RELATED FIELDS, NOT E	66	24
1310	MANAGERS; MEDICINE AND HEALTH	14	1
1320	PRODUCTION MANAGERS, INDUSTRIAL	550	13
1330	CONSTRUCTION MANAGERS	84	3
1341	COMMUNICATIONS OPERATIONS MANAGERS	12	.
1342	TRANSPORTATION FACILITIES AND OPERATIONS MANAGERS	204	.
1343	ELECTRICITY, GAS, WATER SUPPLY, AND SANITARY SERVIC	4	.
1344	POSTMASTERS AND MAIL SUPERINTENDENTS	2	.
1351	MANAGERS; FOOD SERVING AND LODGING ESTABLISHMENTS	1030	31
1352	MANAGERS; ENTERTAINMENT AND RECREATION FACILITIES	124	11
1353	MANAGERS; PROPERTY AND LEASING	160	4
1354	MANAGERS; MEMBERSHIP ORGANIZATIONS	51	2
1359	MANAGERS; SERVICE ORGANIZATIONS, NOT ELSEWHERE CLAS	43	2
1360	MANAGERS; MINING, QUARRYING, WELL DRILLING, AND SIM	2	.
1370	MANAGERS; ADMINISTRATIVE SERVICES	630	6
1390	OFFICIALS AND ADMINISTRATORS; OTHER, NOT ELSEWHERE	952	32
1412	ACCOUNTANTS AND AUDITORS	898	24
1414	UNDERWRITERS	40	.
1415	LOAN OFFICERS	97	1
1419	OTHER FINANCIAL OFFICERS	91	1
1420	MANAGEMENT ANALYSTS	42	3
1430	PERSONNEL, TRAINING, AND LABOR RELATIONS SPECIALIST	179	12
1442	BUYERS, WHOLESALE AND RETAIL TRADE, EXCEPT FARM PRO	99	2
1443	PURCHASING AGENTS AND BUYERS, FARM PRODUCTS	25	.
1449	PURCHASING AGENTS AND BUYERS, NOT ELSEWHERE CLASSIF	258	9
1450	BUSINESS AND PROMOTION AGENTS	10	.
1472	CONSTRUCTION INSPECTORS	36	2
1473	INSPECTORS AND COMPLIANCE OFFICERS, EXCEPT CONSTRUC	71	4
1490	MANAGEMENT RELATED OCCUPATIONS, NEC	866	25
1610	ARCHITECTS	37	4
1622	AEROSPACE ENGINEERS	1	.
1623	METALLURGICAL AND MATERIALS ENGINEERS	15	2
1624	MINING ENGINEERS	1	.
1625	PETROLEUM ENGINEERS	1	.
1626	CHEMICAL ENGINEERS	24	2

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
1627	NUCLEAR ENGINEERS	1	.
1628	CIVIL ENGINEERS	79	6
1632	AGRICULTURAL ENGINEERS	13	.
1633	ELECTRICAL AND ELECTRONIC ENGINEERS	132	44
1634	INDUSTRIAL ENGINEERS	326	20
1635	MECHANICAL ENGINEERS	189	49
1636	COMPUTER ENGINEERS	79	3
1637	MARINE ENGINEERS AND NAVAL ARCHITECTS	4	.
1639	ENGINEERS, NOT ELSEWHERE CLASSIFIED	55	5
1643	LAND SURVEYORS	19	3
1649	SURVEYORS AND MAPPING SCIENTISTS, NOT ELSEWHERE CLA	9	.
1712	COMPUTER SYSTEMS ANALYSTS	97	5
1719	COMPUTER SCIENTISTS, NOT ELSEWHERE CLASSIFIED	4	.
1721	OPERATIONS RESEARCHERS AND ANALYSTS	3	.
1732	ACTUARIES	10	.
1733	STATISTICIANS	67	3
1739	MATHEMATICAL SCIENTISTS, NOT ELSEWHERE CLASSIFIED	6	.
1843	PHYSICISTS	3	1
1845	CHEMISTS, EXCEPT BIOCHEMISTS	70	3
1846	ATMOSPHERIC AND SPACE SCIENTISTS	3	.
1847	GEOLOGISTS	34	.
1849	PHYSICAL SCIENTISTS, NOT ELSEWHERE CLASSIFIED	30	2
1852	FORESTRY AND CONSERVATION SCIENTISTS	93	5
1853	AGRICULTURAL AND FOOD SCIENTISTS	46	2
1854	BIOLOGICAL SCIENTISTS	128	1
1855	MEDICAL SCIENTISTS	8	.
1912	ECONOMISTS	88	1
1913	HISTORIANS	6	.
1915	PSYCHOLOGISTS	62	8
1916	SOCIOLOGISTS	9	.
1919	SOCIAL SCIENTISTS, NOT ELSEWHERE CLASSIFIED	5	.
1920	URBAN AND REGIONAL PLANNERS	20	.
2032	SOCIAL WORKERS	846	65
2033	RECREATION WORKERS	87	49
2042	CLERGY	13	.
2049	RELIGIOUS WORKERS, NOT ELSEWHERE CLASSIFIED	2	.
2110	LAWYERS	62	1
2120	JUDGES	3	.
2200	TEACHERS; COLLEGE, UNIVERSITY AND OTHER POSTSECONDA	70	5
2232	HEALTH SPECIALTIES TEACHERS, NOT ELSEWHERE CLASSIFI	12	1
2310	PREKINDERGARTEN AND KINDERGARTEN TEACHERS	175	5
2320	ELEMENTARY SCHOOL TEACHERS	872	81
2330	SECONDARY SCHOOL TEACHERS	1085	218
2350	TEACHERS; SPECIAL EDUCATION	254	155
2360	INSTRUCTIONAL COORDINATORS	31	5
2390	ADULT EDUCATION AND OTHER TEACHERS, NOT ELSEWHERE C	898	84
2400	VOCATIONAL AND EDUCATIONAL COUNSELORS	340	29
2510	LIBRARIANS	101	21
2520	ARCHIVISTS AND CURATORS	31	2
2610	PHYSICIANS	18	1
2620	DENTISTS	10	.

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
2700	VETERINARIANS	14	.
2810	OPTOMETRISTS	3	.
2890	HEALTH DIAGNOSING AND TREATING PRACTITIONERS, NOT E	6	.
2900	REGISTERED NURSES	400	53
3010	PHARMACISTS	29	.
3020	DIETITIANS	45	3
3031	RESPIRATORY THERAPISTS	50	3
3032	OCCUPATIONAL THERAPISTS	20	14
3033	PHYSICAL THERAPISTS	11	12
3034	SPEECH PATHOLOGISTS AND AUDIOLOGISTS	41	22
3039	THERAPISTS, NOT ELSEWHERE CLASSIFIED	27	2
3040	PHYSICIAN'S ASSISTANTS	15	1
3210	AUTHORS	39	.
3220	DESIGNERS	331	17
3230	MUSICIANS AND COMPOSERS	63	3
3240	ACTORS AND DIRECTORS	98	2
3250	PAINTERS, SCULPTORS, CRAFT-ARTISTS AND ARTIST-PRINT	190	2
3260	PHOTOGRAPHERS	133	10
3270	DANCERS	23	.
3280	PERFORMERS, NOT ELSEWHERE CLASSIFIED	6	3
3290	WRITERS, ARTISTS, AND RELATED WORKERS; NOT ELSEWHER	50	1
3312	EDITORS	58	.
3313	REPORTERS	92	2
3320	PUBLIC RELATIONS SPECIALISTS AND PUBLICITY WRITERS	238	9
3330	RADIO, TELEVISION AND OTHER ANNOUNCERS	132	3
3400	ATHLETES AND RELATED WORKERS	19	2
3620	CLINICAL LABORATORY TECHNOLOGISTS AND TECHNICIANS	102	2
3630	DENTAL HYGIENISTS	37	4
3640	HEALTH RECORD TECHNOLOGISTS AND TECHNICIANS	11	1
3650	RADIOLOGIC TECHNOLOGISTS AND TECHNCIANS	50	4
3660	LICENSED PRACTICAL NURSES	765	18
3690	HEALTH TECHNOLOGISTS AND TECHNICIANS, NOT ELSEWHERE	251	8
3711	ELECTRICAL AND ELECTRONIC ENGINEERING TECHNOLOGISTS	393	38
3712	INDUSTRIAL ENGINEERING TECHNOLOGISTS AND TECHNICIAN	37	6
3713	MECHANICAL ENGINEERING TECHNOLOGISTS AND TECHNICIAN	81	5
3719	ENGINEERING TECHNOLOGISTS AND TECHNICIANS, NEC	37	8
3720	DRAFTING OCCUPATIONS	658	89
3733	SURVEYING TECHNICIANS	35	5
3734	CARTOGRAPHIC TECHNICIANS	8	.
3739	SURVEYING AND MAPPING TECHNICIANS, NOT ELSEWHERE CL	16	.
3820	BIOLOGICAL TECHNOLOGISTS AND TECHNICIANS, EXCEPT HE	28	5
3831	CHEMICAL TECHNOLOGISTS AND TECHNICIANS	159	14
3832	NUCLEAR TECHNOLOGISTS AND TECHNICIANS	15	2
3833	PETROLEUM TECHNOLOGISTS AND TECHNICIANS	2	.
3840	MATHEMATICAL TECHNICIANS	5	1
3890	SCIENCE TECHNOLOGISTS AND TECHNICIANS, NOT ELSEWHER	83	4
3920	AIR TRAFFIC CONTROLLERS	6	.
3930	RADIO AND RELATED OPERATORS	35	.
3960	LEGAL TECHNICIANS	77	2
3971	PROGRAMERS, BUSINESS	350	21
3972	PROGRAMERS, SCIENTIFIC	8	3

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
3974	PROGRAMERS, NUMERICAL, TOOL AND PROCESS CONTROL	59	
3980	TECHNICAL WRITERS	64	1
3990	TECHNICIANS, NOT ELSEWHERE CLASSIFIED	266	2
4010	SUPERVISORS; SALES OCCUPATIONS, INSURANCE, REAL EST	40	1
4020	SUPERVISORS; SALES OCCUPATIONS, COMMODITIES EXCEPT	70	2
4030	SUPERVISORS; SALES OCCUPATIONS, RETAIL	1262	1
4122	INSURANCE SALES OCCUPATIONS	163	23
4123	REAL ESTATE SALES OCCUPATIONS	95	66
4124	SECURITIES AND FINANCIAL SERVICES SALES OCCUPATIONS	37	10
4152	BUSINESS SERVICE, EXCEPT ADVERTISING, SALES OCCUPAT	97	3
4153	ADVERTISING AND RELATED SALES OCCUPATIONS	134	27
4210	SALES ENGINEERS	30	18
4232	TECHNICAL SALES WORKERS, AIRCRAFT	2	1
4233	TECHNICAL SALES WORKERS, AGRICULTURAL EQUIPMENT AND	104	•
4234	TECHNICAL SALES WORKERS, ELECTRONIC EQUIPMENT	29	6
4235	TECHNICAL SALES WORKERS, INDUSTRIAL MACHINERY, EQUI	156	5
4236	TECHNICAL SALES WORKERS, MEDICAL AND DENTAL EQUIPME	30	18
4237	TECHNICAL SALES WORKERS; CHEMICALS AND CHEMICAL PRO	22	2
4239	TECHNICAL SALES WORKERS, NOT ELSEWHERE CLASSIFIED	12	2
4242	SALES REPRESENTATIVES, COMMERCIAL AND INDUSTRIAL EQ	114	1
4243	SALES REPRESENTATIVES, GARMENTS AND RELATED TEXTILE	25	25
4244	SALES REPRESENTATIVES, MOTOR VEHICLES AND SUPPLIES	42	1
4245	SALES REPRESENTATIVES; PULP, PAPER, AND PAPER PRODU	21	6
4246	SALES REPRESENTATIVES; FARM PRODUCTS AND LIVESTOCK	3	2
4249	SALES REPRESENTATIVES; NOT ELSEWHERE CLASSIFIED	1014	1
4342	SALESPERSONS; MOTOR VEHICLES, MOBILE HOMES, AND SUP	181	53
4343	SALESPERSONS; MUSICAL INSTRUMENTS AND SUPPLIES	22	16
4344	SALESPERSONS; BOATS AND MARINE EQUIPMENT AND SUPPLI	3	•
4345	SALESPERSONS; SPORTING GOODS	59	1
4346	SALESPERSONS; GARMENTS AND TEXTILE PRODUCTS	202	4
4347	SALESPERSONS; BOOKS, STAMPS, COINS, AND STATIONERY	12	12
4348	SALESPERSONS; FURNITURE AND HOME FURNISHINGS	72	1
4351	SALESPERSONS, SHOES	52	8
4352	SALESPERSONS; RADIO, TELEVISION, HIGH FIDELITY, AND	55	12
4353	SALESPERSONS; HARDWARE	133	17
4354	SALESPERSONS; COSMETICS, TOILETRIES, AND ALLIED PRO	32	12
4356	SALESPERSONS; JEWELRY AND RELATED PRODUCTS	39	•
4359	SALESPERSONS; NOT ELSEWHERE CLASSIFIED	1437	3
4362	SALES CLERKS	3646	67
4363	COUNTER CLERKS	44	278
4364	CASHIERS	4228	6
4365	NEWS VENDORS	14	408
4366	STREET VENDORS, DOOR-TO-DOOR SALES WORKERS, AND REL	186	5
4367	SALESPERSONS; PARTS	100	106
4369	SALES OCCUPATIONS; SERVICES, NOT ELSEWHERE CLASSIFI	117	14
4440	APPRAISERS AND RELATED OCCUPATIONS	3	5
4450	DEMONSTRATORS, PROMOTERS, AND MODELS	101	1
4490	SALES OCCUPATIONS; OTHER, NOT ELSEWHERE CLASSIFIED	130	12
4511	SUPERVISORS; GENERAL OFFICE OCCUPATIONS	1	36
4512	SUPERVISORS; COMPUTER AND PERIPHERAL EQUIPMENT OPER	32	•
4513	SUPERVISORS; SECRETARIES, STENOGRAPHERS AND TYPISTS	10	•
			•

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
4514	SUPERVISORS; INFORMATION CLERKS	3	.
4516	SUPERVISORS; CORRESPONDENCE CLERKS AND ORDER CLERKS	11	2
4519	SUPERVISORS; RECORD CLERKS	17	.
4521	SUPERVISORS; FINANCIAL RECORD PROCESSING OCCUPATION	29	.
4522	SUPERVISORS; DUPLICATING, MAIL AND OTHER OFFICE MAC	12	.
4523	CHIEF COMMUNICATIONS OPERATORS	3	1
4524	SUPERVISORS; MAIL AND MESSAGE DISTRIBUTION CLERKS	3	.
4525	SUPERVISORS; MATERIAL RECORDING, SCHEDULING, AND DI	163	1
4528	SUPERVISORS; ADJUSTERS, INVESTIGATORS, AND COLLECTO	2	.
4529	SUPERVISORS; MISCELLANEOUS ADMINISTRATIVE SUPPORT O	30	1
4612	COMPUTER OPERATORS	582	29
4613	PERIPHERAL EQUIPMENT OPERATORS	64	2
4622	SECRETARIES	2317	116
4623	STENOGRAPHERS	86	10
4624	TYPISTS	2442	288
4630	GENERAL OFFICE OCCUPATIONS	6582	262
4642	INTERVIEWING CLERKS	118	11
4643	HOTEL CLERKS	150	15
4644	RESERVATION AGENTS AND TRANSPORTATION TICKET CLERKS	53	8
4645	RECEPTIONISTS	1824	73
4649	INFORMATION CLERKS, NOT ELSEWHERE CLASSIFIED	62	6
4652	CLASSIFIED-AD CLERKS	3	1
4663	CORRESPONDENCE CLERKS	20	4
4664	ORDER CLERKS	240	12
4692	PERSONNEL CLERKS, EXCEPT PAYROLL AND TIMEKEEPING	100	4
4694	LIBRARY CLERKS	83	8
4696	FILE CLERKS	311	8
4699	RECORD CLERKS, NEC	215	10
4712	BOOKKEEPING AND ACCOUNTING AND AUDITING CLERKS	2728	94
4713	PAYROLL AND TIMEKEEPING CLERKS	186	6
4715	BILLING CLERKS	56	3
4716	COST AND RATE CLERKS	80	1
4718	BILLING, POSTING, AND CALCULATING MACHINE OPERATORS	161	4
4722	DUPLICATING MACHINE OPERATORS	15	2
4723	MAIL PREPARING AND HANDLING MACHINE OPERATORS	18	.
4729	OFFICE MACHINE OPERATORS, NOT ELSEWHERE CLASSIFIED	5	.
4732	TELEPHONE OPERATORS	168	10
4733	TELEGRAPHERS	22	.
4739	COMMUNICATIONS EQUIPMENT OPERATORS, NOT ELSEWHERE C	12	3
4742	POSTAL CLERKS, EXCEPT MAIL CARRIERS	48	1
4743	MAIL CARRIERS, POST OFFICE	47	.
4744	MAIL CLERKS, EXCEPT POST OFFICE	190	7
4745	MESSENGERS	132	2
4751	DISPATCHERS	159	3
4752	PRODUCTION AND PLANNING CLERKS	254	5
4753	TRAFFIC, SHIPPING, AND RECEIVING CLERKS	1099	39
4754	STOCK AND INVENTORY CLERKS	1432	76
4755	METER READERS	28	3
4756	WEIGHERS, MEASURERS, AND CHECKERS	99	2
4757	SAMPLERS	18	.
4758	EXPEDITERS	148	5

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	SID OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
4759	MATERIAL RECORDING, SCHEDULING, AND DISTRIBUTING CL	121	4
4782	INSURANCE ADJUSTERS, EXAMINERS, AND INVESTIGATORS	113	5
4783	INVESTIGATORS AND ADJUSTERS, EXCEPT INSURANCE	51	5
4784	CLERKS, SOCIAL WELFARE	41	6
4786	BILL AND ACCOUNT COLLECTORS	37	3
4787	LICENSE CLERKS	•	1
4791	BANK TELLERS	292	21
4792	PROOF READERS	12	•
4793	DATA ENTRY KEYERS	895	62
4794	STATISTICAL CLERKS	97	5
4795	TEACHER AIDES	242	7
4799	ADMINISTRATIVE SUPPORT OCCUPATIONS, INCLUDING CLERI	91	4
5020	DAY WORKERS	186	31
5030	LAUNDERERS AND IRONERS	2	1
5040	COOKS, PRIVATE HOUSEHOLD	8	•
5050	HOUSEKEEPERS AND BUTLERS	213	18
5060	CHILD CARE WORKERS, PRIVATE HOUSEHOLD	595	60
5070	PRIVATE HOUSEHOLD CLEANERS AND SERVANTS	266	22
5090	PRIVATE HOUSEHOLD OCCUPATIONS, NOT ELSEWHERE CLASSI	169	56
5111	SUPERVISORS; FIREFIGHTING AND FIRE PREVENTION OCCUP	1	•
5112	SUPERVISORS; POLICE AND DETECTIVES	3	2
5113	SUPERVISORS; GUARDS	28	•
5122	FIRE INSPECTION AND FIRE PREVENTION OCCUPATIONS	7	1
5123	FIREFIGHTING OCCUPATIONS	43	•
5132	POLICE AND DETECTIVES, PUBLIC SERVICE	209	16
5133	CORRECTIONAL INSTITUTION OFFICERS	109	11
5134	SHERIFFS, BAILIFFS AND OTHER LAW ENFORCEMENT OFFICE	43	3
5142	CROSSING GUARDS	51	5
5144	GUARDS AND POLICE, EXCEPT PUBLIC SERVICE	1124	122
5149	PROTECTIVE SERVICE OCCUPATIONS, NEC	19	21
5211	SUPERVISORS; FOOD AND BEVERAGE PREPARATION AND SERV	403	28
5212	BARTENDERS	1308	113
5213	WAITERS AND WAITRESSES	2527	335
5214	COOKS, EXCEPT SHORT ORDER	2184	255
5215	SHORT-ORDER COOKS	948	151
5216	FOOD COUNTER, FOUNTAIN AND RELATED OCCUPATIONS	1794	612
5217	KITCHEN WORKERS, FOOD PREPARATION	535	45
5218	WAITERS'/WAITRESSES' ASSISTANTS	307	24
5219	MISCELLANEOUS FOOD AND BEVERAGE PREPARATION OCCUPAT	2163	159
5232	DENTAL ASSISTANTS	172	7
5233	HEALTH AIDES, EXCEPT NURSING	395	18
5236	NURSING AIDES, ORDERLIES, AND ATTENDANTS	2995	128
5241	SUPERVISORS; CLEANING AND BUILDING SERVICE WORKERS	366	28
5242	MAIDS AND HOUSEMEN	1368	129
5244	JANITORS AND CLEANERS	5740	214
5245	ELEVATOR OPERATORS	10	•
5246	PEST CONTROL OCCUPATIONS	19	2
5249	CLEANING AND BUILDING SERVICE OCCUPATIONS, NOT ELSE	4	2
5251	SUPERVISORS; PERSONAL SERVICE OCCUPATIONS	34	2
5252	BARBERS	37	•
5253	HAIRDRESSERS AND COSMETOLOGISTS	498	15

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
5254	ATTENDANTS, AMUSEMENT AND RECREATION FACILITIES	77	99
5255	GUIDES	22	5
5256	USHERS	11	4
5257	PUBLIC TRANSPORTATION ATTENDANTS	17	.
5258	WARDROBE AND DRESSING ROOM ATTENDANTS	1	.
5262	BAGGAGE PORTERS AND BELLHOPS	12	1
5263	WELFARE SERVICE AIDES	15	1
5264	CHILD CARE WORKERS, EXCEPT PRIVATE HOUSEHOLD	633	25
5269	PERSONAL SERVICE OCCUPATIONS, NOT ELSEWHERE CLASSIF	95	16
5512	GENERAL FARMERS	25	5
5513	CROP, VEGETABLE, FRUIT AND TREE NUT FARMERS	20	23
5514	LIVESTOCK, DAIRY, POULTRY AND FISH FARMERS	22	4
5515	HORTICULTURAL SPECIALTY FARMERS	196	4
5522	MANAGERS; GENERAL FARM	4	.
5523	MANAGERS; CROP, VEGETABLE, FRUIT AND TREE NUT FARM	3	.
5524	MANAGERS; LIVESTOCK, DAIRY, POULTRY AND FISH FARM	8	.
5525	MANAGERS; HORTICULTURAL SPECIALTY FARM	3	.
5611	SUPERVISORS; FARM WORKERS	25	4
5612	GENERAL FARM WORKERS	524	54
5613	FIELD CROP AND VEGETABLE FARM WORKERS (HAND)	376	844
5614	ORCHARD AND VINEYARD AND RELATED WORKERS (HAND)	37	23
5615	IRRIGATION WORKERS	6	2
5616	FARM MACHINERY OPERATORS	129	50
5617	LIVESTOCK WORKERS	453	53
5618	MARINE LIFE CULTIVATION WORKERS	7	5
5619	NURSERY WORKERS	101	73
5621	SUPERVISORS; RELATED AGRICULTURAL WORKERS	36	3
5622	GROUNDSKEEPERS AND GARDENERS, EXCEPT FARM	936	197
5624	ANIMAL CARETAKERS, EXCEPT FARM	175	6
5625	GRADERS AND SORTERS; AGRICULTURAL PRODUCTS	66	.
5627	INSPECTORS; AGRICULTURAL PRODUCTS	6	2
5710	SUPERVISORS; FORESTRY AND LOGGING WORKERS	2	2
5720	FORESTRY WORKERS, EXCEPT LOGGING	194	503
5730	TIMBER CUTTING AND RELATED OCCUPATIONS	309	14
5790	LOGGING OCCUPATIONS, NOT ELSEWHERE CLASSIFIED	13	.
5830	FISHERS	3	1
6000	SUPERVISORS; MECHANICS AND REPAIRERS	163	4
6111	AUTOMOBILE MECHANICS	1619	78
6112	BUS AND TRUCK ENGINE, AND DIESEL ENGINE MECHANICS	388	21
6113	AIRCRAFT ENGINE MECHANICS	3	.
6114	SMALL ENGINE REPAIRERS	246	22
6115	AUTOMOTIVE BODY AND RELATED REPAIRERS	508	45
6116	AIRCRAFT MECHANICS (EXCEPT ENGINE SPECIALISTS)	75	1
6117	HEAVY EQUIPMENT MECHANICS	87	2
6118	FARM EQUIPMENT MECHANICS	105	1
6130	INDUSTRIAL MACHINERY REPAIRERS *	535	17
6140	MACHINERY MAINTENANCE OCCUPATIONS	17	2
6151	COMMUNICATIONS EQUIPMENT REPAIRERS	179	11
6152	ELECTRIC MOTOR, TRANSFORMER, AND RELATED REPAIRERS	36	1
6153	ELECTRICAL AND ELECTRONIC REPAIRERS, COMMERCIAL AND	538	27
6155	ELECTRONIC REPAIRERS, HOME-ENTERTAINMENT EQUIPMENT	88	7

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
6156	HOUSEHOLD APPLIANCE AND POWER TOOL REPAIRERS	95	3
6157	TELEPHONE LINE INSTALLERS AND REPAIRERS	66	5
6158	TELEPHONE INSTALLERS AND REPAIRERS	38	.
6159	MISC ELECRICAL AND ELECTRONIC EQUIPMENT REPAIRERS	15	5
6160	HEATING, AIR-CONDITIONING, AND REFRIGERATION MECHAN	145	22
6171	CAMERA, WATCH, AND OTHER PRECISION INSTRUMENT REPAI	50	.
6172	MUSICAL INSTRUMENT REPAIRERS AND TUNERS	6	.
6173	LOCKSMITHS AND SAFE REPAIRERS	16	1
6174	OFFICE MACHINE REPAIRERS	62	11
6175	MECHANICAL CONTROLS AND VALVE REPAIRERS	11	.
6176	ELEVATOR INSTALLERS AND REPAIRERS	3	.
6177	RIGGERS	13	.
6178	MILLWRIGHTS	1122	38
6179	MECHANICS AND REPAIRERS, NOT ELSEWHERE CLASSIFIED	1475	45
6311	SUPERVISORS; OVERALL CONSTRUCTION	12	1
6312	SUPERVISORS; BRICKMASONS, STONEMASONS, AND HARD TIL	10	.
6313	SUPERVISORS; CARPENTERS AND RELATED WORKERS	34	1
6314	SUPERVISORS; ELECTRICIANS AND POWER TRANSMISSION IN	2	.
6315	SUPERVISORS; PAINTERS, PAPERHANGERS, AND PLASTERERS	2	.
6316	SUPERVISORS; PLUMBERS AND PIPEFITTERS AND STEAMFITT	12	.
6318	SUPERVISORS; OTHER CONSTRUCTION TRADES	29	1
6320	SUPERVISORS; EXTRACTIVE OCCUPATIONS	1	.
6412	BRICKMASONS	216	18
6413	STONEMASONS	10	.
6414	TILE SETTERS, HARD	14	.
6422	CARPENTERS	1820	142
6424	DRYWALL INSTALLERS	118	4
6432	ELECTRICIANS	592	23
6433	ELECTRICAL POWER INSTALLERS AND REPAIRERS	86	8
6442	PAINTERS (CONSTRUCTION AND MAINTENANCE)	560	45
6443	PAPERHANGERS	2	.
6444	PLASTERERS	19	2
6450	PLUMBERS, PIPEFITTERS AND STEAMFITTERS	436	18
6462	CARPET AND SOFT TILE INSTALLERS	72	2
6463	CONCRETE AND TERRAZZO FINISHERS	353	21
6464	GLAZIERS	22	2
6465	INSULATION WORKERS	12	3
6466	PAVING, SURFACING, AND TAMPING EQUIPMENT OPERATORS	92	1
6467	RAIL AND TRACK LAYING EQUIPMENT OPERATORS	34	5
6468	ROOFERS	356	13
6473	STRUCTURAL METAL WORKERS	181	4
6474	DRILLERS, EARTH	19	2
6475	AIR HAMMER OPERATORS	1	.
6476	PILE DRIVING OPERATORS	6	.
6479	CONSTRUCTION TRADES, NOT ELSEWHERE CLASSIFIED	3239	57
6520	DRILLERS, OIL WELL	3	.
6530	EXPLOSIVE WORKERS	8	.
6540	MINING MACHINE OPERATORS	10	.
6550	EXTRACTIVE OCCUPATIONS, NEC	14	.
6700	SUPERVISORS; PRECISION PRODUCTION OCCUPATIONS	46	5
6811	TOOL AND DIE MAKERS	243	19

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
6812	PRECISION ASSEMBLERS (METAL)	268	20
6813	MACHINISTS	1166	70
6814	BOILERMAKERS	84	3
6816	PRECISION GRINDERS, FILERS, AND TOOL SHARPENERS	133	7
6817	PATTERNMAKERS AND MODEL MAKERS (METAL)	30	5
6821	LAY-OUT WORKERS	102	8
6822	PRECISION HAND MOLDERS AND SHAPERS (JEWELERS)	19	1
6823	ENGRAVERS	10	1
6824	SHEET METAL WORKERS	259	13
6829	MISCELLANEOUS PRECISION METAL WORKERS	48	8
6831	PATTERNMAKERS AND MODEL MAKERS, WOOD	24	1
6832	CABINET MAKERS AND BENCH CARPENTERS	398	79
6835	FURNITURE FINISHERS	19	.
6839	MISCELLANEOUS PRECISION WOODWORKERS	5	.
6841	PRECISION TYPESETTERS	28	2
6842	PRECISION LITHOGRAPHERS AND PHOTOENGRAVERS	27	2
6844	BOOKBINDERS	3	.
6849	MISC PRECISION PRINTING OCCUPATIONS	11	.
6852	TAILORS AND DRESSMAKERS, HAND	77	4
6853	UPHOLSTERERS	47	2
6854	SHOEMAKERS AND LEATHER WORKERS AND REPAIRERS	18	.
6855	PRECISION LAUNDERING, CLEANING, AND DYEING OCCUPATI	2	1
6856	APPAREL AND FABRIC PATTERNMAKERS	1	1
6859	MISCELLANEOUS PRECISION APPAREL AND FABRIC WORKERS	8	6
6861	PRECISION HAND MOLDERS AND SHAPERS (EXCEPT JEWELERS	180	1
6862	PRECISION PATTERNMAKERS, LAY-OUT WORKERS AND CUTTER	27	5
6863	DETAIL DESIGN PAINTERS AND DECORATORS	96	7
6864	OPTICAL GOODS WORKERS	36	.
6865	DENTAL LABORATORY TECHNICIANS	46	1
6866	GEM AND DIAMOND WORKING OCCUPATIONS	1	.
6867	PRECISION ELECTRICAL AND ELECTRONIC EQUIPMENT ASSEM	67	6
6868	PHOTOGRAPHIC PROCESS WORKERS	45	2
6869	MISCELLANEOUS PRECISION WORKERS, NOT ELSEWHERE CLAS	16	4
6871	BUTCHERS AND MEAT CUTTERS	90	.
6872	BAKERS	106	5
6873	BATCHMAKERS (CANDYMAKERS, CHEESEMAKERS, ETC.)	81	7
6879	MISCELLANEOUS PRECISION FOOD WORKERS	11	1
6881	PRECISION INSPECTORS, TESTERS, AND GRADERS	485	19
6882	PRECISION ADJUSTERS AND CALIBRATORS	3	.
6910	WATER AND SEWAGE TREATMENT PLANT OPERATORS	46	.
6920	GAS PLANT OPERATORS	1	.
6931	STATIONARY ENGINEERS	128	1
6932	POWER PLANT AND SYSTEMS OPERATORS, EXC. STATIONARY	23	.
6940	CHEMICAL PLANT OPERATORS	9	.
6950	PETROLEUM PLANT OPERATORS	1	.
6960	MISC PLANT OR SYSTEM OPERATORS	32	3
7100	SUPERVISORS; PRODUCTION OCCUPATIONS	1076	33
7312	LATHE AND TURNING MACHINE SETUP OPERATORS	173	21
7313	MILLING AND PLANING MACHINE SETUP OPERATORS	79	.
7314	PUNCHING AND SHEARING MACHINE SETUP OPERATORS	560	24
7315	EXTRUDING AND DRAWING MACHINE SETUP OPERATORS	36	1

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
7316	ROLLING MACHINE SETUP OPERATORS	10	.
7317	PRESS AND BRAKE MACHINE SETUP OPERATORS	85	3
7318	DRILLING AND BORING MACHINE SETUP OPERATORS	152	6
7319	FORGING MACHINE SETUP OPERATORS	37	.
7322	GRINDING, ABRADING, BUFFING, AND POLISHING MACHINE	174	2
7326	NUMERICAL CONTROL MACHINE SETUP OPERATORS	126	11
7329	MISCELLANEOUS METALWORKING AND PLASTIC WORKING MACH	1246	53
7332	WELDING MACHINE SETUP OPERATORS	119	6
7333	SOLDERING AND BRAZING MACHINE SETUP OPERATORS	9	.
7339	MISCELLANEOUS FABRICATING MACHINE SETUP OPERATORS	183	15
7342	MOLDING AND CASTING MACHINE SETUP OPERATORS	221	19
7343	PLATING AND COATING MACHINE SETUP OPERATORS	39	1
7431	LATHE AND TURNING MACHINE SETUP OPERATORS	32	2
7432	ROUTER AND PLANER MACHINE SETUP OPERATORS	7	.
7435	SHAPING AND JOINING MACHINE SETUP OPERATORS	2	.
7439	MISCELLANEOUS WOODWORKING MACHINE SETUP OPERATORS	11	1
7443	PRINTING PRESS SETUP OPERATORS	288	13
7444	PHOTOENGRAVING AND LITHOGRAPHING MACHINE SETUP OPER	65	2
7449	MISCELLANEOUS PRINTING MACHINE SETUP OPERATORS	57	.
7452	KNITTING AND WEAVING MACHINE SETUP OPERATORS	5	.
7463	EXTRUDING AND FORMING MACHINE SETUP OPERATORS	7	3
7467	COMPRESSING AND COMPACTING MACHINE SETUP OPERATORS	1	.
7472	ROASTING AND BAKING MACHINE SETUP OPERATORS	1	.
7474	FOLDING MACHINE SETUP OPERATORS	16	.
7476	STILL, CLARIFYING, AND PRECIPITATING MACHINE SETUP	46	1
7477	CRUSHING, GRINDING AND POLISHING MACHINE SETUP OPER	9	.
7473	SLICING AND CUTTING MACHINE SETUP OPERATORS	27	.
7479	MISCELLANEOUS MACHINE SETUP OPERATORS	57	3
7512	LATHE AND TURNING MACHINE OPERATORS AND TENDERS	221	8
7513	MILLING AND PLANING MACHINE OPERATORS AND TENDERS	64	.
7514	PUNCHING AND SHEARING MACHINE OPERATORS AND TENDERS	293	1
7515	EXTRUDING AND DRAWING MACHINE OPERATORS AND TENDERS	7	.
7516	ROLLING MACHINE OPERATORS AND TENDERS	1	.
7517	PRESS AND BRAKE MACHINE OPERATORS AND TENDERS	56	.
7518	DRILLING AND BORING MACHINE OPERATORS AND TENDERS	337	1
7519	FORGING MACHINE OPERATORS AND TENDERS	17	.
7522	GRINDING, ABRADING, BUFFING AND POLISHING MACHINE O	127	3
7529	MISCELLANEOUS METALWORKING AND PLASTIC WORKING MACH	3066	39
7532	WELDING MACHINE OPERATORS AND TENDERS	17	.
7533	SOLDERING AND BRAZING MACHINE OPERATORS AND TENDERS	19	.
7539	MISCELLANEOUS FABRICATING MACHINE OPERATORS AND TEN	36	.
7542	MOLDING AND CASTING MACHINE OPERATORS AND TENDERS	298	12
7543	PLATING AND COATING MACHINE OPERATORS AND TENDERS	60	7
7544	HEATING EQUIPMENT OPERATORS AND TENDERS	120	.
7549	MISCELLANEOUS METAL AND PLASTIC PROCESSING MACHINE	90	.
7631	LATHE AND TURNING MACHINE OPERATORS AND TENDERS	3	3
7632	ROUTER AND PLANER MACHINE OPERATORS AND TENDERS	4	.
7633	SAWING MACHINE OPERATORS AND TENDERS	133	3
7634	SANDING MACHINE OPERATORS AND TENDERS	14	1
7635	SHAPING AND JOINING MACHINE OPERATORS AND TENDERS	6	.
7636	NAILING AND TACKING MACHINE OPERATORS AND TENDERS	2	.

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
7639	MISCELLANEOUS WOODWORKING MACHINE OPERATORS AND TEN	17	•
7642	TYPESETTING AND COMPOSING MACHINE OPERATORS AND TEN	44	4
7643	PRINTING MACHINE OPERATORS AND TENDERS	109	7
7644	PHOTOENGRAVING AND LITHOGRAPHING MACHINE OPERATORS	19	•
7649	PRINTING MACHINE OPERATORS AND TENDERS, NOT ELSEWHE	206	9
7651	WINDING AND TWISTING MACHINE OPERATORS AND TENDERS	25	•
7652	KNITTING AND WEAVING MACHINE OPERATORS AND TENDERS	25	•
7654	TEXTILE CUTTING MACHINE OPERATORS AND TENDERS	49	1
7655	TEXTILE SEWING MACHINE OPERATORS AND TENDERS	643	202
7656	SHOE MACHINE OPERATORS AND TENDERS	61	6
7657	PRESSING MACHINE OPERATORS	99	7
7658	LAUNDERING AND DRY CLEANING MACHINE OPERATORS AND T	232	7
7659	MISCELLANEOUS TEXTILE MACHINE OPERATORS AND TENDERS	96	2
7661	CEMENTING AND GLUING MACHINE OPERATORS AND TENDERS	18	•
7662	PACKAGING AND FILLING MACHINE OPERATORS AND TENDERS	384	14
7663	EXTRUDING AND FORMING MACHINE OPERATORS AND TENDERS	75	1
7664	MIXING AND BLENDING MACHINE OPERATORS AND TENDERS	237	16
7665	COOLING AND FREEZING EQUIPMENT OPERATORS AND TENDER	7	•
7666	SEPARATING AND FILTERING MACHINE OPERATORS AND TEND	37	•
7667	COMPRESSING AND COMPACTING MACHINE OPERATORS AND TE	51	•
7668	BOILER OPERATORS AND TENDERS (LOW PRESSURE)	19	•
7669	COATING, PAINTING, AND SPRAYING MACHINE OPERATORS A	117	12
7671	PHOTOGRAPHIC PROCESSING MACHINE OPERATORS	51	3
7672	ROASTING AND BAKING MACHINE OPERATORS AND TENDERS	12	•
7673	WASHING, CLEANING AND PICKLING EQUIPMENT OPERATORS	34	•
7674	FOLDING MACHINE OPERATORS AND TENDERS	27	•
7675	FURNACE, KILN, AND OVEN OPERATORS AND TENDERS	27	1
7676	STILL, CLARIFIER AND PRECIPITATOR OPERATORS AND TEN	28	1
7677	CRUSHING, GRINDING AND POLISHING MACHINE OPERATORS	90	2
7678	SLICING AND CUTTING MACHINE OPERATORS AND TENDERS	132	4
7679	MISC MACHINE OPERATORS AND TENDERS, NEC	623	3
7714	WELDERS AND CUTTERS	3255	52
7717	SOLDERERS AND BRAZERS	21	•
7720	ASSEMBLERS	10820	442
7740	FABRICATORS, NOT ELSEWHERE CLASSIFIED	173	8
7752	HAND SEWING OCCUPATIONS	46	2
7753	HAND CUTTING AND TRIMMING OCCUPATIONS	310	8
7754	HAND MOLDING AND CASTING OCCUPATIONS	80	1
7755	HAND FORMING AND SHAPING OCCUPATIONS	11	3
7756	HAND PAINTING, COATING AND DECORATING OCCUPATIONS	525	36
7757	HAND ENGRAVING AND PRINTING OCCUPATIONS	62	3
7758	HAND GRINDING AND POLISHING OCCUPATIONS	332	2
7759	MISCELLANEOUS HAND WORKING OCCUPATIONS	700	296
7820	PRODUCTION INSPECTORS, CHECKERS AND EXAMINERS	741	10
7830	PRODUCTION TESTERS	107	2
7840	PRODUCTION SAMPLERS AND WEIGHERS	65	2
7850	GRADERS AND SORTERS, EXCEPT AGRICULTURAL	99	2
7870	PRODUCTION EXPEDITERS	5	•
8111	SUPERVISORS; MOTOR VEHICLE OPERATORS	31	•
8113	RAILROAD CONDUCTORS AND YARDMASTERS	3	•
8120	SUPERVISORS; MATERIAL MOVING EQUIPMENT OPERATORS	14	4

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	SID OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
8212	TRUCK DRIVERS, TRACTOR-TRAILER	1930	184
8213	TRUCK DRIVERS, HEAVY	3023	52
8214	TRUCK DRIVERS, LIGHT (INCLUDING DELIVERY AND ROUTE	1172	43
8215	BUS DRIVERS	393	6
8216	TAXICAB DRIVERS AND CHAUFFEURS	89	4
8218	DRIVER-SALES WORKERS	914	34
8219	OTHER MOTOR TRANSPORTATION OCCUPATIONS, NOT ELSEWHE	1	.
8232	LOCOMOTIVE OPERATING OCCUPATIONS	9	.
8233	RAILROAD BRAKE, SIGNAL, AND SWITCH OPERATORS	20	.
8239	RAIL VEHICLE OPERATORS, NOT ELSEWHERE CLASSIFIED	2	.
8241	SHIP CAPTAINS AND MATES	13	.
8242	BOAT AND BARGE OPERATORS	11	.
8243	SAILORS AND DECKHANDS	59	1
8244	MARINE ENGINEERS	23	1
8245	BRIDGE, LOCK, AND LIGHTHOUSE TENDERS	11	1
8250	AIRPLANE PILOTS AND NAVIGATORS	39	2
8280	TRANSPORTATION INSPECTORS	11	.
8312	OPERATING ENGINEERS	848	13
8313	LONGSHORE EQUIPMENT OPERATORS	29	.
8314	HOIST AND WINCH OPERATORS	62	1
8315	CRANE AND TOWER OPERATORS	272	.
8316	EXCAVATING AND LOADING MACHINE OPERATORS	41	2
8317	GRADER, DOZER, AND SCRAPER OPERATORS	62	3
8318	INDUSTRIAL TRUCK AND TRACTOR EQUIPMENT OPERATORS	2262	12
8319	MISC MATERIAL MOVING EQUIPMENT OPERATORS	126	7
8500	SUPERVISORS; HANDLERS, EQUIPMENT CLEANERS, HELPERS,	7	.
8611	HELPERS; METALWORKING AND PLASTIC WORKING MACHINE O	670	12
8614	HELPERS; METAL AND PLASTIC PROCESSING MACHINE OPERA	26	.
8615	HELPERS; WOODWORKING MACHINE OPERATORS AND TENDERS	1	.
8616	HELPERS; PRINTING MACHINE OPERATORS AND TENDERS	36	1
8617	HELPERS; TEXTILE, APPAREL AND FURNISHINGS MACHINE O	14	2
8618	HELPERS; MACHINE OPERATORS AND TENDERS, ASSORTED MA	225	11
8619	HELPERS; PRECISION PRODUCTION OCCUPATIONS AND SETUP	153	10
8620	HELPERS; FABRICATORS AND INSPECTORS	70	1
8632	HELPERS; VEHICLE AND MOBILE EQUIPMENT MECHANICS AND	602	12
8633	HELPERS; INDUSTRIAL MACHINERY REPAIRERS	89	5
8635	HELPERS; ELECTRICAL AND ELECTRONIC EQUIPMENT REPAIR	5	1
8637	HELPERS; MISCELLANEOUS MECHANICS AND REPAIRERS	105	9
8641	HELPERS; BRICKMASONS, STONEMASONS, AND HARD TILE SE	7	.
8642	HELPERS; CARPENTERS AND RELATED WORKERS	11	.
8643	HELPERS; ELECTRICIANS AND POWER TRANSMISSION INSTAL	132	3
8644	HELPERS; PAINTERS, PAPERHANGERS AND PLASTERERS	2	.
8645	HELPERS; PLUMBERS, PIPEFITTERS AND STEAMFITTERS	11	.
8646	HELPERS; SURVEYOR'S	52	4
8649	HELPERS, OTHER CONSTRUCTION TRADES	61	4
8650	HELPERS; EXTRACTIVE OCCUPATIONS	5	.
8710	CONSTRUCTION LABORERS	1813	35
8722	GARBAGE COLLECTORS	48	.
8723	STEVEDORES	34	.
8724	STOCK HANDLERS AND BAGGERS	30	9
8725	MACHINE FEEDERS AND OFFBEARERS	4134	54

CURRENT JOB APPLICANTS AND OPENINGS
END OF MAY 1985 REPORT
SOURCE: ESARS

SDA=STATEWIDE

SOC CODE	STD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	UNFILLED OPENINGS
8726	FREIGHT, STOCK, AND MATERIAL MOVERS, NOT ELSEWHERE	10864	617
8730	GARAGE AND SERVICE STATION RELATED OCCUPATIONS	350	29
8740	PARKING LOT ATTENDANTS	40	7
8750	VEHICLE WASHERS AND EQUIPMENT CLEANERS	203	15
8761	HAND PACKERS AND PACKAGERS	3067	163
8769	MANUAL OCCUPATIONS, NEC	6773	465
9100	MILITARY OCCUPATIONS	10	.
9900	MISCELLANEOUS OCCUPATIONS	108	3
9999	INVALID DOT--SOC OF 9999 ASSIGNED	42743	346
		226849	13517

Section C. New Occupational Clusters -- The "WILL" System

The WILL system (Wisconsin Information on Local Labor Markets) incorporates occupational supply and demand information on a micro-computer floppy disk to enable users to get fast answers to such questions as: Which are the fastest-growing occupations? What vocational training courses relate to those occupations? How many are enrolled in those courses?

The system is new. At the present time, WILL contains Wisconsin state data only, including the 1990 occupational projections, Job Service applicants and openings, and vocational program enrollees, together with the identifying occupational and training codes and titles.

Because there is not a direct one-to-one relationship among the standard occupational coding systems and the various training program codes currently in use, the WILL system employs clusters in which related occupations and programs are grouped.

The clusters were developed in a joint effort involving the Bureau of Labor Market Information in the Department of Industry, Labor and Human Relations (DILHR), the State Board of Vocational, Technical and Adult Education (VTAE), the Wisconsin Department of Public Instruction (DPI), and the Wisconsin Career Information System (WCIS). Thus, hundreds of occupational and training codes and titles used by different agencies were grouped into a smaller number of uniformly recognized clusters--in effect, a common language. Upon selecting a cluster, users can still identify the specific codes and titles that went into the cluster while also calling up the particular supply and demand information they seek.

The codes and titles included within the clusters are: the Standard Occupational Classification (SOC), the VTAE Program Code and the Comprehensive Instructional Program (CIP). Recognizing that WILL's contents must remain dynamic in changing times, the cluster will be reviewed and updated by the participants periodically.

The WILL system is now being demonstrated by the Wisconsin Occupational Information Coordinating Council (WOICC). The system runs on an IBM PC or compatible computer. Interested persons may contact:

Franz Backus, WOICC
GEF 1, Room 202
201 E. Washington Avenue
Madison, Wisconsin 53703
(608) 266-6722